U. S. TREASURY DEPARTMENT - - - COAST GUARD

BULLETIN No. 34

INTERNATIONAL ICE OBSERVATION AND ICE PATROL SERVICE IN THE NORTH ATLANTIC OCEAN - [SEASON of 1948]

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INTERNATIONAL ICE OBSERVATION AND ICE PATROL SERVICE

IN THE

NORTH ATLANTIC OCEAN

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CG-188-3

Season of 1948

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FOREWORD

In presenting this report of the activity of the International Ice Patrol during the 1948 season, the authors wish to acknowledge the assistance given by Lt. (jg) David S. Williams; Charles J. Albanese, QMC; and William B. Arndt; AG3, in the preparation of this report. Oceanographer Floyd M. Soule, Lt. (jg) Harry H. Carter, and Lt. Leroy A. Cheney prepared the section of this Bulletin dealing with the Oceanographic work. The remainder of the Bulletin was prepared by Lt. Ernest R. Challender and Lt. (jg) Harry H. Carter.

INTERNATIONAL ICE PATROL, 1948

The Commander, International Ice Patrol, during the 1948 season was Captain D. G. Jacobs. The planes used in aerial reconnaissance operated as a part of the Coast Guard Air Detachment, Argentia, which was under the command of Comdr. J. R. Henthorn. The patrol cutters *Mendota* and *Mocoma* were commanded by Comdr. G. H. Bowerman and Comdr. R. M. Ross respectively. The USCGC *Evergreen* was under the command of Comdr. E. A. Cascini. Captain V. E. Day commanded the *Ingham*. The Ice Patrol Officer was Lt. E. R. Challender. Lt. L. A. Cheney and Lt. (jg) D. S. Williams were Ice Observation Officers. Oceanographer Floyd M. Soule was in charge of the oceanographic work with Lt. (jg) H. H. Carter as assistant oceanographer during the season. Lieutenant Cheney relieved Lt. (jg) Carter as assistant oceanographer for the post-season cruise.

The mission of the International Ice Patrol has remained substantially unchanged through the years since its establishment. Briefly, its mission is to guard the southeastern, southern and southwestern limits of the regions of icebergs in the vicinity of the Grand Banks of Newfoundland for the purpose of informing trans-Atlantic and other passing vessels of the extent of this dangerous region; to observe and study ice conditions in general; to destroy or remove derelicts; and to afford assistance to vessels and crews requiring aid within the limits of operation of the patrol vessels. Although, as stated previously, the mission has remained substantially unchanged through the years, the method of accomplishing this mission has been in a constant state of improvement. The three most important advances in method were: (1) The introduction of dynamic topographic charts, i.e., current charts, in 1931, (2) the introduction of aircraft to supplement the activity of the surface patrol vessels in 1946, and (3) the use of radar in ice patrol planes and ships to supplement visual scouting. Actually, aircraft were used all during the war years to observe ice conditions but the year of introduction is placed in 1946 because of the suspension of the International Service of Ice Observation and Ice Patrol in December of 1941 until early in 1946. This suspension of services necessitated a temporary interruption of the oceanographic program. The season of 1948 was unlike the two previous post-war seasons in that it was possible to renew the oceanographic program which had been interrupted in December, 1941. The 180-foot tender class cutter *Evergreen* was fitted out for oceanographic work and assigned as the oceanographic vessel of the Ice Patrol. Materiel difficulties with the oceanographic equipment, principally the winches, impeded work on the oceanographic program seriously at the beginning and to a decreasing extent throughout the season.

With the exception of the resumption of the oceanographic program, the season of 1948 was conducted in the same manner as in 1946 and 1947. That is, the surface vessels on patrol, using call sign NIDK,

collected the 4-hourly reports from ships passing through the ice patrol area and relayed the ice and obstruction reports to the Ice Patrol Office ashore where this information was combined with similar information from all other sources and condensed into the ice bulletins which were broadcast to shipping twice daily. The Ice Patrol Office was located at the Naval Operating Base, Argentia, Newfoundland. Planes of the United States Coast Guard Air Detachment, Argentia, Newfoundland, were used, together with the facilities of the Naval Operating Base, Argentia, Newfoundland, at which place the ships were based.

The surface patrol vessel carried the customary Ice Observation Officer. His function was to advise the commanding officer of the cutter in technical matters of ice patrol; keep a plot of ice, ships in transit through the area, and sea surface temperatures; to warn ships standing into danger; and to answer requests for special ice information.

It has been emphasized in previous bulletins and is reemphasized here that the above formal organization is only the framework of the International Service of Ice Observation and Ice Patrol. The majority of effort is supplied by all maritime agencies and ships crossing the North Atlantic. Thanks are extended to all cooperating agencies and vessels. Without their cooperation the successful performance of this international service would not be possible. The total number of ships cooperating was 572 representing 21 countries. 82.9 percent of these vessels represented 5 of the 21 countries. Following is a list of the 5 major participating countries followed by their percentage of the total vessels:

	Percent
United States	42.4
Great Britain	28.5
Norway	4.5
Sweden	4.0
Canada	3.5
All others	17.1
Total	100.0

During the latter part of 1939, and at the April 1940 meeting of the Commission of Snow and Glaciers of the International Union of Geodesy and Geophysics, attention was called to the desirability of taking an iceberg census of Davis Strait and Baffin Bay. It was believed that a knowledge of the relative amount and extent of pack-ice and icebergs in Davis Strait and Baffin Bay would furnish a better estimate than at present of the character of the ice season the following spring on the Grand Banks. As a result, in the late summer of 1940 [1] the *USCGC Northland* carried out an iceberg and pack-ice census of Davis Strait and Baffin Bay. Original plans called for this ice census to be repeated on 3 successive years, however the census started by the *Northland* in 1940 was interrupted in 1941 because of the war. It was not possible to

[1] Smith, Edward H., Ice Observation in the Greenland Sector, 1940. International Ice Observation and Ice Patrol Service in the North Atlantic Ocean. Season of 1940. U. S. Coast Guard Bulletin No. 30, p. 13 (1941), Washington.

undertake this ice census again until 1948. The ice census of Davis Strait and Baffin Bay was undertaken in 1948 by one of the planes used during the regular season. This plane was camera-equipped and photographs were made of major concentrations of bergs. Surface support was furnished by the *USCGC Ingham*. A more detailed description of the ice census of 1948 together with a discussion of results is contained elsewhere in this Bulletin.

During the season two requests for medical advice were received. On 29 May, 1948 the S. S. *Adabelle Lykes* in position 42°24′ N.,45° 15′ W., reported a crew member with carbon tetrachloride poisoning. They had previously received medical advice from some other source on 23 May but the patient was not responding to treatment. The *Adabelle Lykes* and the *Mendota* altered course toward each other intending to rendezvous and transfer the patient to the *Mendota*. However, at 1650-G.c.t. on the 29th, the *Adabelle Lykes* reported that the patient had died at 1645G.c.t., 29 May. Rendezvous with the *Lykes* was effected and the Medical Officer of the *Mendota* visited the *Lykes*. The death and cause of death were confirmed. The *Mendota* then resumed patrol. During the 5th cruise, the *Mendota* received a request from the S. S. *William Vaughn Moody* for medical advice; reported position at 35°28′ N., 40°10′ W. The *William Vaughn Moody* was advised to hospitalize the patient at the earliest opportunity and to contact some vessel with hospital facilities near her position. No further reports on the progress of the patient were received.

In addition to the above requests for medical advice, the *Mendota* on 9 June, while enroute from Argentia, Newfoundland, to Boston, Mass., took the fishing vessel *Raymonde* in tow at 42°34′ N., 68°40′ W., for Gloucester, Mass. The *Raymonde* was turned over to the fishing vessel *Puritan* 2 miles east of Eastern Point Buoy No. 2A on the morning of the 10th.

AERIAL ICE RECONNAISSANCE

As in 1946 and 1947, the use of aircraft for ice reconnaissance proved to be a valuable supplement to surface scouting. The word "supplement" is used instead of "replacement" because during periods of low visibility complete coverage from the air cannot be attained. Aircraft attached to the Ice Patrol are radar-equipped but even with the radar working at peak performance it is often impossible to investigate a radar target and identify it visually. Wooden fishing vessels and their dories give a radar return which is indistinguishable from the return from a berg with growlers around it. Safe flying practices prohibit visual identification of these targets during periods of low visibility because of the hazard of collision with a lofty berg. In general, flights are made whenever prospective terminal conditions, flying weather, and observing weather in the critical area(s) combine to give promise of a successful aerial reconnaissance.

During the 1948 season two winterized PB1G (Flying Fortress) planes were used for aerial ice reconnaissance. A total of 84 flights were made on 64 different days from 6 February to 6 July, inclusive. The duration of these flights totaled 637.4 hours distributed chronologically as shown in figure 1.

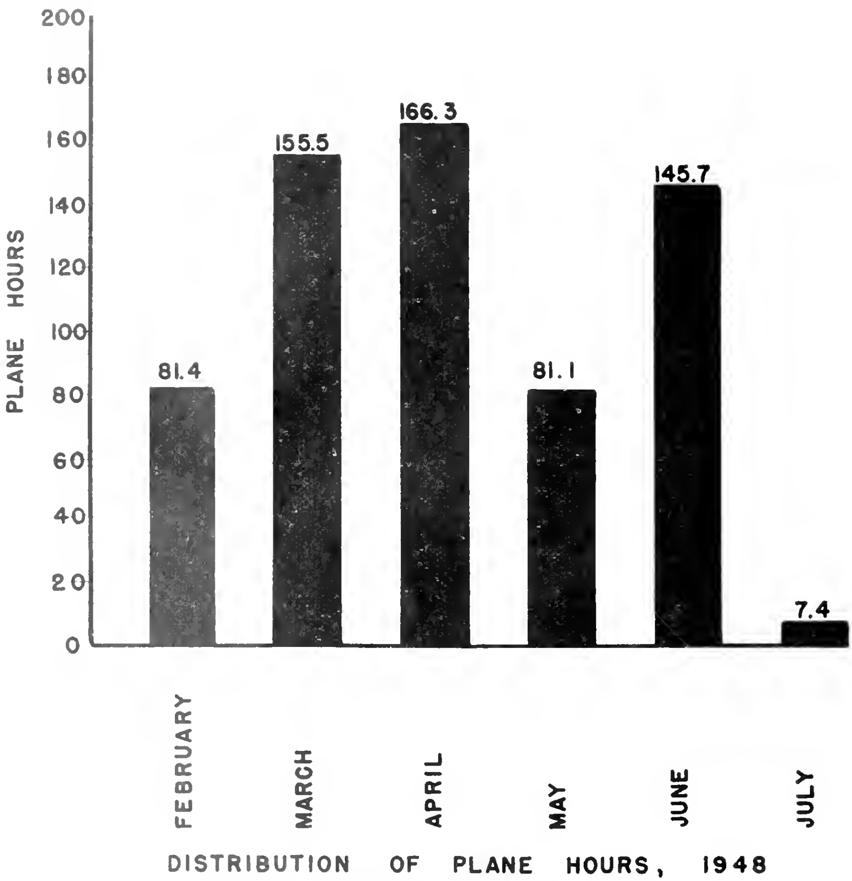

FIGURE 1.—Distribution of plane hours, 1948.

The individual flights varied in duration from 1.5 hours to 11.6 hours. The flights averaged 7.6 hours per flight. The maximum interval between flights was 21 days occurring between 17 May and 7 June. The remaining intervals between flights are summarized below:

Interval in days:	*Frequency*
1	26
2	19
3	8
4	5
5	3
6	1

On the basis of an estimated average ground speed of 150 nautical miles per hour for the PB1G aircraft, it is estimated that the 2 PB1G aircraft flew a distance of 95,610 miles during the 1948 season. As search courses are usually laid out parallel and 25 miles apart it is estimated that the area covered was 2,390,250 square miles. As coverage is never 100 percent complete, it is estimated that the total area covered lies somewhere in the neighborhood of 1,500,000 square miles.

During 1948 the use of aircraft made it possible for the patrol cutters assigned to the Ice Patrol to standby in their home ports until the ice situation combined with the poor visibility over the Grand Banks region, a characteristic of the late spring and early summer months, to make a surface vessel patrol mandatory. Although the first aerial reconnaissance flight was made on 6 February and the first regularly scheduled ice broadcast to shipping was transmitted on the 15th of March, it was not necessary to call the first patrol cutter out until late in April.

To sum up, the use of planes for ice reconnaissance results in additional safety for the surface traffic in the Grand Banks by providing more accurate and extensive knowledge of the ice situation. The cost of this increased efficiency arising from the use of planes is counterbalanced in part by safely delaying the beginning of surface-patrol vessel activity.

ICE CONDITIONS IN 1948

FEBRUARY

Up to the first of the month reports from weather ships proceeding to and returning from station indicated that it was probable that no field ice existed south of 49° N., or east of 52° W. In addition, there had been no bergs reported in the Grand Banks area or in the Newfoundland coastal waters. On the 6th, the first aerial survey by ice patrol planes showed the southeastern limits of the field ice to run from 49°10′ N., 53°00′ W., to 50°50′ N., 52°05′ W., and thence northwesterly. The field was open and still comparatively light although a few arctic cakes were in evidence. Sludge was present from Fogo Island to Cape Freels extending from the beach to 15 miles offshore.

The field moved southward until on the 17th an ice patrol flight observed the southern edge of the field extending from Cape Bonavista easterly to about 48°30′ N., 51°20′ W., thence northwesterly to 49°10′ N., 52°00′ W. From this point the field extended eastward to 49°20′ N., 51°15′ W., and thence northwesterly. South of 49°30′ N., the field consisted of light sludge and north of 49°30′ N., the field was heavier with some cakes 20 to 30 feet in diameter. On the 20th, the field was observed from Funk Island northwest to approximately the latitude of Hamilton Inlet, Labrador. In general, the eastern limits of the field followed the coastline about 70 miles offshore. From Hamilton Inlet to Belle Isle the field was closely packed. South of Belle Isle the field was more open, cover ranging from eight-tenths to three-tenths. Numer-

ous bergs and growlers were sighted in the field from Belle Isle to Hamilton Inlet. By the 25th the appearance of the southern portion of the field had been greatly modified. The two tongues which had characterized the field on the 17th had disappeared. The field extended from Baccalieu Island to 49°30′ N., 51°50′ W., and thence northnorthwesterly.

In general, the eastern boundary of the field was light and consisted mostly of slush. Proceeding shoreward from the eastern boundary, new winter ice containing heavy cakes predominated. In the vicinity of Funk Island the ice was the heaviest ranging from close to consolidated pack ice. Along the southern boundary of the field off of Baccalieu Island and Trinity Bay slush and in some cases light cakes were present. During the month the field never extended south of 48°20′ N.; although during the latter portion of the month there were some strings and streaks of sludge running southeast from the main field and extending as far south as Cape Spear. South of Cape Bonavista the field represented no hindrance to navigation during the month.

In the meantime, on the 10th of the month the limits of the field in the St. Lawrence area were observed by an ice patrol flight to be from Cape Egmont to 30 miles to the east thence to the southeast to a position 38 miles east of Scatari Island and thence to St. Esprit Island. Only light sludge was present south of Cape Breton with a cover up to about five-tenths. The outer 5 to 10 miles of the field north of Scatari Island was heavier and it is doubtful that this portion of the field was navigable. The inner portion of the field north of Scatari Island was mostly sludge with no ice present to the shoreward of a line from Cape Smoke to Flint Island except in small bays and inlets. By the 16th of the month the northeastern limits of the field had moved such that the field now ran from a point 15 miles southwest of Cape Ray to a point 30 miles east of Scatari Island and thence to St. Esprit Island. Only the seaward boundary of the field was observed on this date. It consisted of large cakes for the most part and was rather closely packed with navigation limited to specially constructed vessels. By the 26th of the month the field had progressed southwestward almost to Cape Canso, and on the 47th parallel a tongue extended to Burgeo Bank. The width of this tongue was approximately 5 to 10 miles. South of Scatari Island the outer portion of the field consisted of small cakes with a cover ranging from three-tenths to five-tenths. The inner portion was slush. Running off shore from the outer limits of the main field were numerous patches and strings of sludge extending to the southeast as far as Misaine Bank. To the north of Scatari Island the outer portion of the field consisted of heavier ice with a cover ranging from three-tenths to ten-tenths with five-tenths or more predominating. Only the outer boundary was observed on this date.

No bergs were known to have drifted south of the 48th parallel during February. The distribution of ice for this period is shown graphically on the February Ice Chart, figure 2.

The month of March saw the invasion of the Grand Banks area by bergs and the most southerly extension of the field ice for the season. At the beginning of the month the field ice extended south to Cape Bonavista. From Cape Bonavista the eastern boundary of the field ice ran to 50°30′ N., 52°15′ W., and thence northnorthwesterly. Between these limits and the Newfoundland coast there were numerous bergs and growlers. East and south of these limits strings and patches of sludge extended to a distance of 10 to 40 miles. The inner portion of the field south of Cape Freels and the entire field north of Cape Freels was closely packed making navigation impossible. The outer portion of the field south of Cape Freels was more loosely packed, cover ranging from three-tenths to seven-tenths. By the 3d of the month the field had moved further south. The eastern boundary of the field now ran from Cape Spear to 47°50′ N., 52°10′ W., thence to a point midway between Funk Island and Fogo Island, thence due north. From the southern boundary of the main field, light sludge extended 18 miles to the south. Light sludge was also present along the eastern boundary of the main field, its maximum eastward extension being 42 miles in the vicinity of Cape Bonavista. Cover in this light sludge surrounding the eastern and southern portions of the main field ranged from seven-tenths to nine-tenths. The main field consisted almost entirely of consolidated pack ice and was not navigable except by specially constructed vessels. There were numerous bergs and growlers throughout the field.

As the month progressed the addition of heavier ice from the north, together with the predomination of processes of ice formation over melting along the southern and eastern boundaries of the main field, resulted in a further extension of the main field to the south and east. By the 14th of the month the main field had reached its maximum southerly extension for the year. It then extended from Baccalieu Island to a point several miles east of Cape St. Francis then southward along the Newfoundland coast to a position 30 miles south of Cape Race. From here it ran northeastward to 48°00′ N., 50°30′ W., thence northward. Surrounding the pack on the east was a belt of strings and patches of sludge from 15 to 25 miles wide. A belt of sludge running along the southern boundary of the main field was bounded on the south by the parallel of 45°40′ N. The southwestern boundary extended from Cape St. Mary to 45°40′ N., 53°40′ W. The main field was consolidated pack ice containing numerous bergs and growlers along the length of its western boundary. The sludge belt contained two growlers; one at 46°03′ N., 52°28′ W., the other at 46°13′ N., 53°21′ W.

The middle of the month marked a turning point in the growth and distribution of the field ice. The southern boundary of the main field retreated to the north, but simultaneously a tongue of field ice broke out to the east along the 100-fathom curve of the Grand Banks. At the same time the western boundary of the main field commenced to move off

shore. By the 19th of the month the southern limits had retreated to the 47th parallel, between the 51st and 52d meridians.

During this recession the main field's closest approach to the Newfoundland coast occurred off of Cape Spear. There was a shore lead 12 miles wide at this position. Elsewhere the leads ranged from 30 to 45 miles. A tongue of close pack ice, cover ranging from five-tenths to seven-tenths, ran along the 100-fathom curve of the Grand Banks extending as far south as 47°30′ N., and as far east as 47°10′ W. This tongue reached its maximum easterly extension on the 27th of the month being contained on the east by the 46th meridian. By the end of the month the southern limits of the main field were definitely retreating to the north. The tongue of field ice running along the 100-fathom curve of the Grand Banks was all that remained with the exception of scattered strings and patches of sludge in the west in the vicinity of Cape Race and Cape Spear and in the east along the meridian of 47°30′ W., between 45°40′ N., and 46°50′ N. These scattered strings and patches represented no hindrance to navigation however.

In the meantime the melting of the main field released numerous bergs and growlers. These bergs were now free to move independently of the field itself. In the absence of field ice, the predominant force acting upon the bergs is, of course, the ocean currents. The main branch of the Labrador Current running southward along the eastern slope of the Grand Banks swept 5 bergs and 12 growlers into a position to become a menace to ships traveling on the scheduled track C. Therefore on 1 April United States-European traffic was shifted to track B, 10 days earlier than the date of prescribed shift, 11 April.

The St. Lawrence ice reached its maximum southerly extension during the first week in March. During the first week the field spread as far south as 44°20′ N., in the vicinity of Sable Island and west to the 64th meridian just off the coast of Nova Scotia. There was a belt of slush ice to the east running from the Newfoundland coast south to the 45th parallel between the eastern boundary of the main field running along the meridian of 58°40′ W., and the 58th meridian. During the first part of the month the main field was light to moderately heavy winter ice. It was unnavigable, however, except for a small shore lead along the Newfoundland coast between Cape Ray and Cape Anguille. By the 19th of the month the southern boundary had retreated to Misaine Bank and the field had narrowed considerably. The eastern boundary now ran from Cape Ray to Burgeo Bank, south to Artimon Bank and thence west to Misaine Bank. The western boundary ran from Cape Egmont southeast to 46° N., 59° W., and thence southwest to Misaine Bank. By the end of the month the outer limits of the field ice ran from Cape Ray to 46°20′ N., 58°30′ W., to 45°00′ N., 58°30′ W., and thence to Scatari Island.

An estimated 60 bergs entered the area south of the 48th parallel during March; the majority of them during the latter half of the month.

Due to the manner in which the field ice invaded the region they were evenly distributed from the coast of Newfoundland to the 46th meridian. Figure 3 shows the distribution of bergs and field ice during March.

APRIL

During the first part of the month the field ice along the northeastern slope of the Grand Banks deteriorated rapidly. By the 6th of the month the southern limits of the main field ran from 48°20′ N., 51°00′ W., to 47°35′ N., 48°00′ W. There were scattered strings of sludge running to the southeast from the main field between the 47th and 49th meridians. After the 6th of the month melting was rapid and this was the last date the field was observed or reported. By the third week in April the Grand Banks area was definitely clear of all field ice.

Melting of the field ice occurred less rapidly in the St. Lawrence area. At the beginning of the month the outer limits ran from Scatari Island to the northern tip of Burgeo Bank, to Misaine Bank, and thence to Cape Ray. By the 17th of the month the southern and eastern boundaries had receded and the limits now ran from a point 15 miles off Cape Ray to 46°43′ N., 58°40′ W., to 46°00′ N., 59°05′ W., and thence to Scatari Island. Between the 17th and the last week in April these limits fluctuated as much as 30 miles to the east and south. By the 19th of April a vessel had passed through the gulf and up the St. Lawrence River arriving in Montreal on that date. By the 30th of the month, however, the Canadian Department of Transport reported that all ports in the western part of the Gulf of St. Lawrence were open to navigation. Close pack ice still remained to the northeast of Cape Breton Island, the outer limits running from Cape North to 46°50′ N., 59°30′ W., to 46°25′ N., 58°40′ W.

The melting of the field ice in the Grand Banks area released a number of bergs along the northeastern slope of the Grand Banks. These drifted southward toward the Tail of the Banks and southeastward into the area immediately south of Flemish Cap. On the first of the month the southernmost berg was reported at 46°16′ N., 45°23′ W., just south of Flemish Cap. Further to the west, the southernmost of the bergs proceeding southward along the eastern slope of the Grand Banks had reached approximately the same latitude. Between the 1st and the 10th of the month, bergs and growlers were reported as far to the southeast as 45°10′ N., 44°50′ W. These represented a potential menace to vessels traveling on the scheduled United States-European track B. However the period was one in which conditions permitted frequent aerial reconnaissance of the critical areas. For that reason it was not deemed necessary to inaugurate a surface vessel patrol at that time. As the month progressed the potential menace to track B by the bergs in the area south of Flemish Cap lessened. Merchant vessel reports and aerial reconnaissance indicated a northward recession of the southern limits of the bergs in this area. On the other hand, those bergs in the Labrador

Current moving south along the eastern slope of the Grand Banks continued their southward movement until on the 23d several bergs and growlers were reported as far south as 43° N., 49° W.

Anticipating the advent of unfavorable conditions for aerial reconnaissance during the early part of May, the *USCGC Mendota* departed from Argentia, Newfoundland at 2031 G.c.t., 26 April on an ice observation cruise in the vicinity of the Tail of the Banks, the bergs in that area representing the greatest potential menace to vessels traveling track B. By the end of the month 2 bergs had rounded the Tail of the Banks, one being located at 43°04′ N., 50°19′ W., the other at 42°57′ N., 50°38′ W. As the month ended, bergs, upon arriving in the area between the Grand Banks and Flemish Cap, still tended to separate, the greater proportion proceeding southward along the slope of the Grand Banks but with a smaller proportion still persisting in moving to the southeast to a position just to the south of Flemish Cap. Here their progress to the southeast ceased. No current chart for this period and area was available but it appeared likely that the northeasterly flowing Atlantic Current was blocking their further progress to the southeast. For that reason, bergs taking the southeastern branch at the fork represented little or no menace to track B, the critical area being near the Tail of the Banks.

It is estimated that 210 bergs drifted south of 48° N., during April. The distribution of bergs and field ice during the month of April is shown graphically in figure 4.

MAY

During the last few days in April and the first few days in May, the ice observation vessel scouted out the areas south and west of the Tail of the Banks. Of the two bergs that had been sighted on the 29th of April just to the west of the Tail of the Banks by an ice patrol plane, only one was relocated at 43°03′ N., 50°20′ W. Conditions for aerial reconnaissance in this area were unfavorable during the first part of May until the 12th when the eastern slope of the Grand Banks between the 43d and 47th parallels was scouted out by ice patrol aircraft. The 12th was merely the best of a series of bad days, however, and complete coverage was not possible. As a result the berg previously sighted at the Tail of the Banks was not relocated nor were any bergs sighted to the east of the slope.

On the 13th of the month the ice observation vessel sighted a berg at 43°19′ N., 50°10′ W. This was undoubtedly the same one sighted previously at 43°03′ N., 50°20′ W. An examination of the current chart for the period 6 to 10 May, contained elsewhere in this bulletin, will show the presence of a small clockwise eddy centered just north of the Tail of the Banks. After rounding the Tail of the Banks late in April, this particular berg was evidently carried to the northward in the above mentioned clockwise eddy, subsequently grounding in 35 fathoms of water in the position where it was sighted by the ice observation vessel on the 13th. It is difficult to explain how a berg with its dimensions

(120 feet high and 450 feet in length) could have drifted into such shoal water. Originally the underwater body of the berg must have resembled a huge shelf surrounding a central mass of ice which projected above the water.

By the third week in the month the over-all picture on the Grand Banks was altered somewhat. There were now a number of bergs in position to drift southward in the western branch of the Labrador Current along the Avalon Peninsula of Newfoundland. One having already made the journey was reported off Cape Race on the 15th. At the same time bergs were reported as far east as the 45th meridian between the 45th and 47th parallels and as far east as the 44th meridian between the 47th and 48th parallels.

In the meantime the over-all berg picture coupled with adverse conditions for aerial scouting in the Grand Banks area as a whole necessitated the inauguration of a continuous surface vessel patrol. Therefore at 1130 G.t.c. on 14 May a continuous surface vessel patrol was inaugurated. On the 18th of the month the ice patrol vessel located a berg at 44°30′ N., 45°38′ W. When located it was drifting to the southeast. By the 20th of the month the berg had deteriorated considerably and was apparently drifting in a small counterclockwise eddy. Although only 40 miles to the northwest of westbound track B it had definitely ceased to be a potential threat. By the end of the month, only a few bergs had successfully negotiated the trip southward from the 48th parallel along the slope of the Grand Banks and a similarly small number into the area south of Flemish Cap. One had managed to round the Tail of the Banks. A few were still reported along the Avalon Peninsula from Cape Race to Baccalieu Island. None threatened vessels traveling on the scheduled United States-European track B.

As the month began, the field ice limits in the St. Lawrence area ran from 5 miles off Cape North to 46°50′ N., 59°30′ W., and thence to 46°25′ N., 58°40′ W. On the 10th of the month the Canadian Department of Transport reported scattered strings and patches of field ice as far east as the 59th meridian between 45°50′ N., and 47°00′ N., with a 10-mile wide shore lead along the east coast of Cape Breton Island. By the 16th of the month only remnants of heavy field ice remained off the east coast of Cape Breton Island between 45°50′ N., and 47°00′ N. The end of the month saw the St. Lawrence area definitely clear of all field ice.

To the north a belt of field ice 40 miles wide was reported on the 18th along the coast of Labrador and Newfoundland running northward from the parallel of 50°20′ N., and blocking the Strait of Belle Isle. The Strait of Belle Isle was apparently clear westward of the 56th meridian.

During the month of May it is estimated that 185 bergs drifted into the area south of 48° N. Their distribution is shown graphically in figure 5.

JUNE

A marked reduction in the number of bergs entering the area south of

48° N., occurred during the month of June. Their distribution followed the same general pattern throughout the month. None managed to move south of the 44th parallel along the eastern slope of the Grand Banks. Several drifted to the southeast into the area south of Flemish Cap where they represented a definite menace to vessels traveling the steamer lanes southeast of the Grand Banks. These bergs penetrated further to the southeast during this month than during any preceding or subsequent month. One was reported on track B, then in effect, on the 6th of the month at 41°19′ N., 45°16′ W. It was reported as a small berg and as the ice patrol vessel was unable to locate it, it is believed that if it existed it did not long survive the relatively high water temperatures in its vicinity. During the month three bergs drifted into position to menace vessels traveling on westbound track B. Each of the three drifts occurred at separated intervals throughout the month, however, enabling the ice patrol vessel to drift with the berg until its ultimate destruction. For this reason it was not necessary to resort to extra southern track A. With the exception of a growler sighted at 44°28′ N., 47°58′ W., on the 28th, the area south of 47° N., and east of 52° W., was clear of all ice by the end of the month. As a conservative estimate based on the above mentioned growler's size and the existing water temperatures in its vicinity, it was believed that this growler would be completely destroyed by the end of the month. The shift from United States-European track B to track C, scheduled for 1 July was made on time.

Throughout the month, bergs were reported or sighted along the Avalon Peninsula from Baccalieu Island to Cape Race. As the month ended a berg and growler were located approximately 20 miles east of Cape Race, several offshore in the vicinity of Cape Spear, and 1 just south of Baccalieu Island.

Further to the north, on the 7th of June the Belle Isle Radio reported the first successful vessel navigation of the Strait for 1948. The end of the month found several bergs to seaward of the entrance and scattered bergs along the Labrador coast bordering the Strait to the north. Between the Strait of Belle Isle and Hamilton Inlet there were numerous bergs and growlers along the Labrador coast and offshore to a distance of 120 miles between the 53d and 54th parallels. It is estimated that 68 bergs entered the area south of 48° N. during the month of June. Their distribution is shown graphically in figure 6.

JULY

As the month began, the area south of 47° N., and east of 52° W., was clear of all ice. The southernmost berg was located at 47°38′ N., 47°47′ W. Its drift was eastward and there remained little probability that it would become a menace to vessels traveling on scheduled United States-European track C. The continuous surface vessel patrol was therefore discontinued on 2 July. On 7 July the ice season in the Grand Banks

area was declared officially ended. Presumably all bergs present in the area south of 48° N. at this time disintegrated by the end of July.

It is estimated that no bergs entered the area south of the 48th parallel during the month of July.

AUGUST, SEPTEMBER, OCTOBER

No bergs are known to have drifted south of latitude 48° N., during these months.

NOVEMBER, DECEMBER

On 2 December, two bergs were reported at 46°32′ N., 55°52′ W., southeast of St. Pierre Island. To arrive in this position by 2 December, they must have entered the area south of 48° N. during the month of November. However, a plane from the Coast Guard Air Detachment, Argentia, Newfoundland, had occasion to fly over this area shortly after the 2d and reported no bergs in evidence. They did report numerous fishing vessels in that general vicinity. In addition, the reporting vessel indicated the sighting was made at 0120 G. c. t. or during darkness. Past experience has shown that during the hours of darkness it is very easy to mistake a fishing vessel under sail for an iceberg. For the abovementioned reasons, it is believed that no bergs drifted south of 48° N. during the months of November and December.

ICE CONDITIONS NORTH OF 50° N.

The meagerness of information regarding ice conditions north of 50° N. precludes tracing the progress of the advancing season in northern waters with any satisfactory degree of continuity. Less than 10 ice patrol flights extended north of 50° N., and very little information was received from surface vessels and other aircraft. In general, during the months of February and March the eastern pack ice limits along the coast of Labrador were displaced from 50 to 100 miles to the westward of the monthly mean limits as contained in the Ice Atlas of the Northern Hemisphere.[2] The eastern pack ice limits during April, May, June and July are unknown. It is probable, however, that this westward displacement of the eastern limits characterized the entire season off the coast of Labrador. Reports received from a United States Navy vessel enroute from Argentia, Newfoundland, to Hamilton Inlet, Labrador, late in June indicated that the eastern limits of the pack ice were displaced approximately 25 miles to the westward of the average limits. This is based on the fact that the route of this vessel was approximately 30 miles to the west of the normal eastern limits of sea ice unnavigable by unreinforced vessels during the month of June. Suspecting that there was a greater than normal onshore wind component during the preceding winter months which moved the ice on shore, the normal and actual pressure gradients between Resolution Island and Belle Isle were examined for the period 1 October 1947 through 31 March 1948.

[2] H. O. No. 550, First Edition (1946), Washington.

Normally during the period from 1 October to 1 February the effects of onshore and offshore winds will approximately neutralize each other. Actually, however, during this same period the effect of the onshore winds were approximately five to six times as great as the effect of the offshore winds. This was largely due to an extremely large anomaly during the month of December. That is, the pressure gradients which give rise to onshore winds were six to seven times larger than normal during December. During February and March the winds are normally onshore. Actually, however, the pressure gradients indicated an offshore effect approximately twice as great as the normal onshore effect. It is possible that during December the onshore winds rafted the ice to such an extent that the westward displacement of the eastern limits of the sea ice along the Labrador coast characterized the entire season notwithstanding the preponderance of offshore winds during February and March. Normally the Strait of Belle Isle can be navigated by unreinforced vessels by the last week in June. In 1948 the Belle Isle Radio reported the first successful vessel navigation of the strait on 7 June, indicating an early northward recession of the field ice.

There is no information available upon which to base a reconstruction of the progress of the limits of the storis around Cape Farewell, northward along the southwestern coast of Greenland and its subsequent recession. What little information is available, however, seems to indicate an earlier than normal recession of the storis limits. A United States Navy plane enroute from Goose Bay, Labrador, to Narsarssuak, Greenland, late in June, reported sighting no storis off Simiutak Island. Visibility, however, was limited to a narrow strip along their course line. Normally storis is present in this area until late in July or early in August indicating the possibility of an earlier than normal recession of the storis limits. It is possible, however, that the storis was present further to the north and was not sighted because of the limited visibility. The USCGC *Evergreen*, while conducting the post-season oceanographic survey, ran a line of oceanographic stations from South Wolf Island, Labrador, to Cape Farewell and found the outer limits of the storis about 11 miles off Cape Farewell on the 16th of July. Normally Cape Farewell is not free of storis until early August. While approaching Cape Farewell on the 15th of July, the *Evergreen* encountered an easterly gale with winds up to 65 knots. In addition on the 20th of July, the *Evergreen*, while approaching Narsarssuak from the west, enountered storis off Brede Fjord. It is possible that additional storis was moved northwestward around Cape Farewell by the easterly gale of the 15th, and that this additional storis was encountered by the *Evergreen* off Brede Fjord on the 20th.

Figure 8 in the section of this Bulletin dealing with the iceberg census of Baffin Bay and Davis Strait shows the distribution of the west ice in Baffin Bay and Davis Strait during the later part of July. The total amount of west ice was considerably less than usual for this time of the year. In addition, the eastern, northern, and southern limits were dis-

placed to the west, south, and north respectively from their monthly means.

SUMMARY

It is estimated that 523 bergs drifted south of 48° N. during 1948. This compares with the 49-year average, 1900 through 1948, of 433. The outstanding feature of the 1948 season was the fact that although a greater than average number of bergs drifted south of 48° N., only a few actually entered track C and only one reached track B. The one reaching track B was a ship report and is doubtful. It was reported on June at 41°19′ N., 45°16′ W. The report is considered doubtful for the following reasons:

(1) Several ships crossed this area on the 4th and 5th reporting fair to excellent conditions of visibility.

(2) Another ship, radar-equipped, passed within one-half mile of the reported position of the berg within 1 hour after the reporting vessel without sighting or detecting any ice.

(3) The object was reported sighted at approximately midnight local apparent time without benefit of moonlight.

To summarize, a greater than average number of bergs drifted south of the 48th parallel. Further southward progress was impeded to the extent that a relatively small number, possibly 10 to 15, drifted south of westbound track C, and only one and possibly none reached track B. The relationship between this deficiency of bergs reaching southerly positions and the location of the northern boundary of the Atlantic Current is discussed elsewhere in this Bulletin in the section dealing with the oceanography of the Grand Banks region.

The total amount of field ice in the St. Lawrence area was somewhat less than usual. The above comparison and those to follow are based on the monthly mean sea ice limits contained in the Ice Atlas of the Northern Hemisphere published by the Hydrographic Office of the United States Navy (H.O. No. 550). In general the deficiency of sea ice in this region was due in part to a westward displacement of the eastern limits of the sea ice during the months of February, March, April, and May. In addition the southern limits of the sea ice were displaced to the northward during the months of February, April, and May. March was approximately normal with regard to the southern limits.

In the Grand Banks region the total amount of field ice was less than usual. In February the southern limits of the sea ice were displaced approximately 100 miles to the north and the eastern limits were displaced to the west. Maximum westward displacement was approximately 185 miles along the parallel of 47°50′ N. In March the southwestern limits were normal, but along the eastern slope of the Grand Banks the southern limits were displaced northward almost 120 miles along the 48th meridian. As a result of continued northwesterly winds of gale force in the area during the last week in March, the outer limits to the east extended to the 46th meridian, a gain of 30 miles over the monthly mean. By the

third week in April all field ice in the Grand Banks area south of 49° N. had disappeared. This represented a departure in time from mean conditions of nearly 1 month. Normally April finds slush still present south and west of Cape Race and along the slope of the Grand Banks as far south as the 44th parallel. May was extremely anomalous, there being no sea ice in the area during the entire month, whereas normally slush extends as far south as the 47th parallel with patches as far east as the 47th meridian.

The only known marine casualty which resulted from ice during the 1948 season was the Danish steamer *Nevada*, which struck an iceberg on the morning of 6 June, 21 miles east of Baccalieu Island. The *Nevada* was bound from Wabana, Bell Island, Newfoundland, to Europe. Damages to the bow of the *Nevada* were estimated at approximately $35,000, with no personnel casualties. The *Nevada* was able to make port at St. Johns, Newfoundland, unassisted.

ICEBERG CENSUS OF BAFFIN BAY

One of the services, which the governments party to the International Convention for the Safety of Life at Sea have undertaken to provide is for the study and observation of ice conditions in the North Atlantic. Most of the answers to the questions involving the presence, quantity, distribution, and behavior of ice in the vicinity of the Grand Banks of Newfoundland involve conditions "upstream" from that area all the way to the iceberg source regions in Greenland. In the absence of definite knowledge, assumptions must be made until the facts are known. One set of such facts not yet known but pertinent to many of the problems farther south, deal with the usual period of travel of a berg from its parent glacier to the Grand Banks, and the conditions of that travel which result in such great mortality, conservatively estimated at more than 80 percent.

It is known that while glacier activity is greater in summer than in winter, there is an even more marked seasonal variation in the release of bergs from the glacier fjords. This, coupled with occasional reports of large concentrations of bergs encountered by mariners in Baffin Bay, suggests the possibility that different year-classes of bergs may be identified by such concentrations and that the length of the usual travel time may be inferred from the number of concentrations. Thus an ice census of Baffin Bay taken on each of at least three successive years might give positive information regarding the length of the period of travel time usually required for a berg to complete the journey from its glacier fjord to the Grand Banks, as well as yielding quantitative information on the mortality rate. A beginning was made in the summer of 1940 when the cutter *Northland* took such a census. Unfortunately the war interfered with the continuation of this series and it was not until 1948 that available facilities made it feasible to begin a new series. The 1948 iceberg census of Baffin Bay was carried out by one of the PB1G aircraft regularly assigned to International Ice Patrol during the 1948 season. The plane

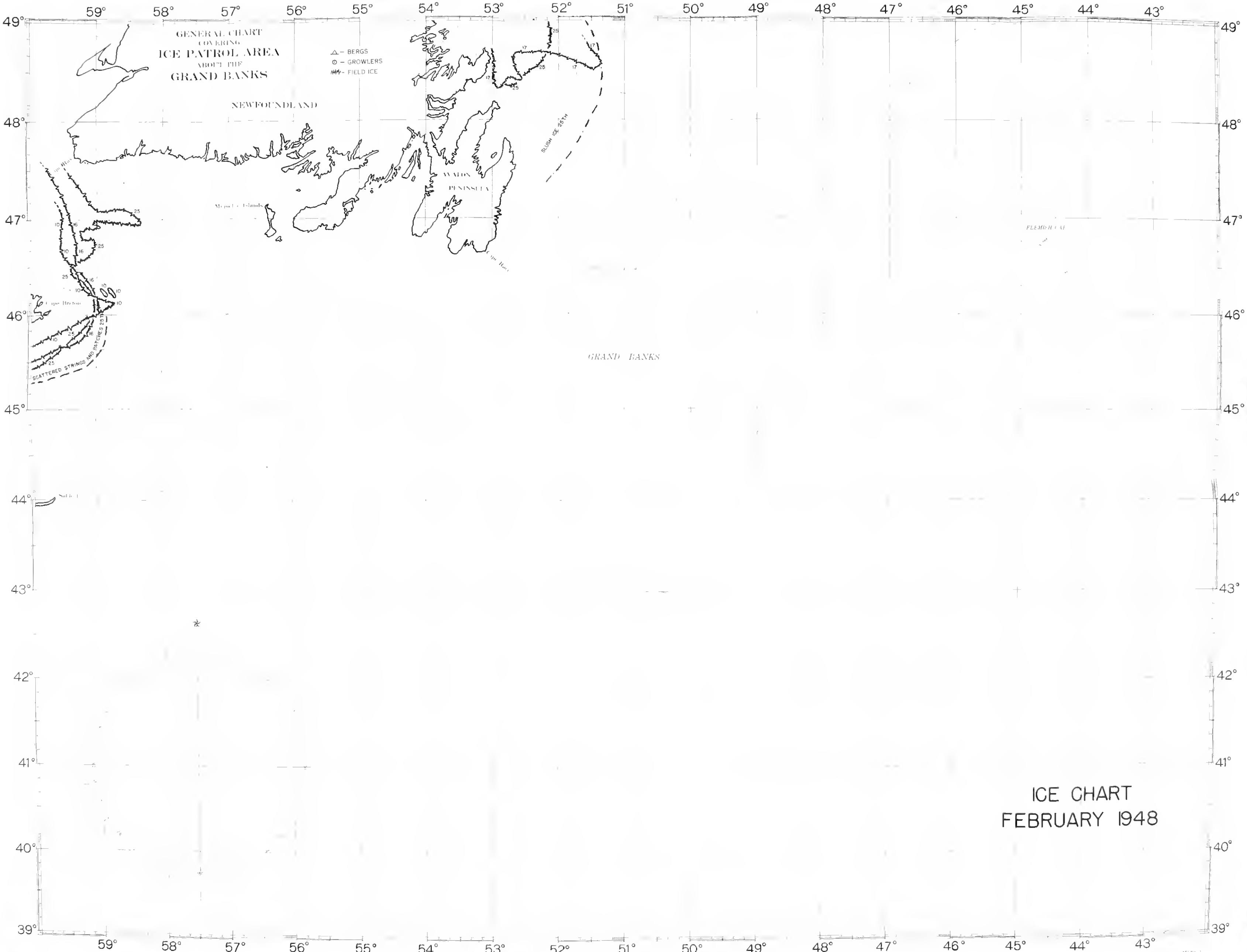

Figure 2.—Ice conditions, February 1948. Figures indicate day of month ice was sighted or reported.

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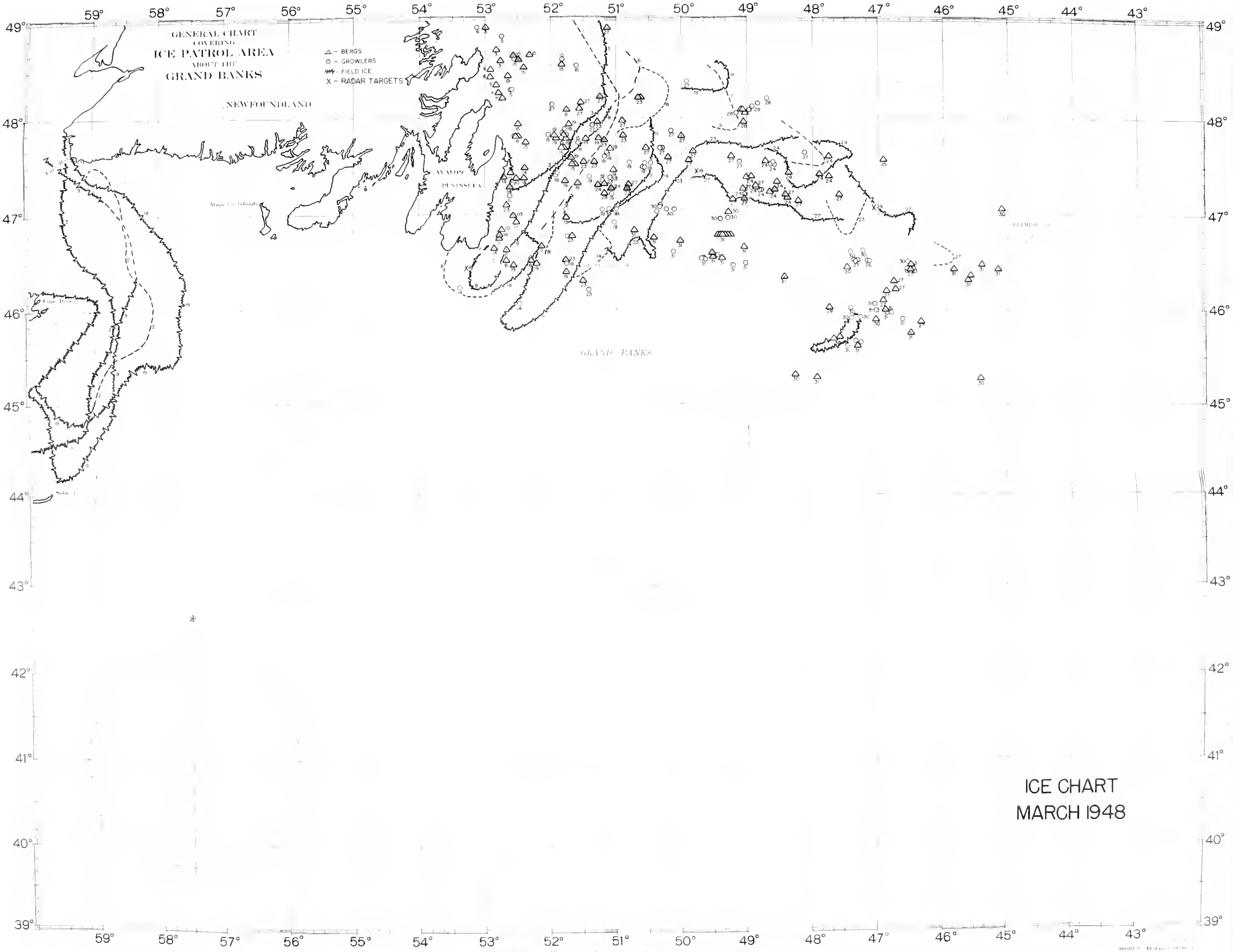

Figure 3.—Ice conditions, March 1948. Figures indicate day of month ice was sighted or reported.

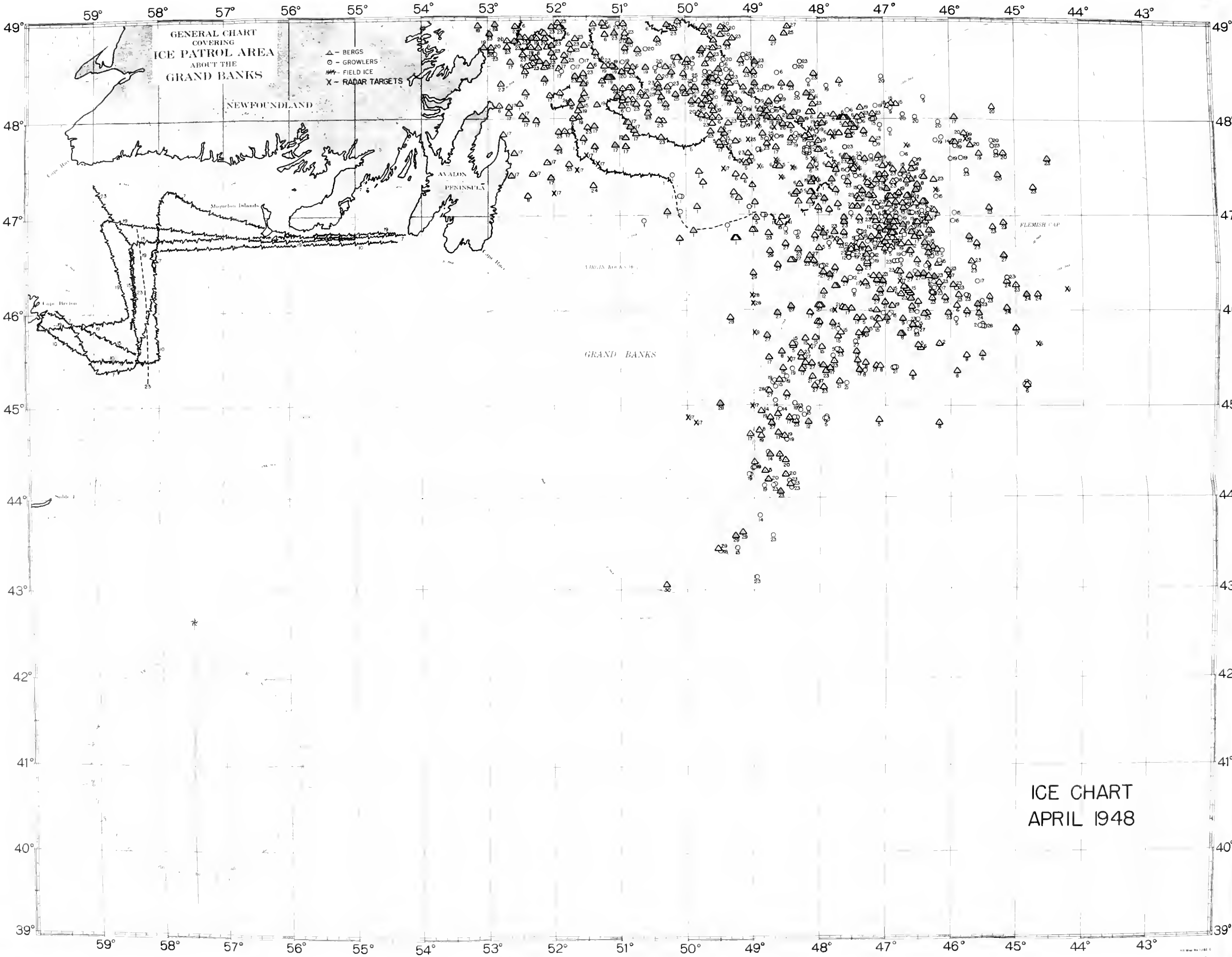

FIGURE 4.—Ice conditions, April 1948. Figures indicate day of month ice was sighted or reported.

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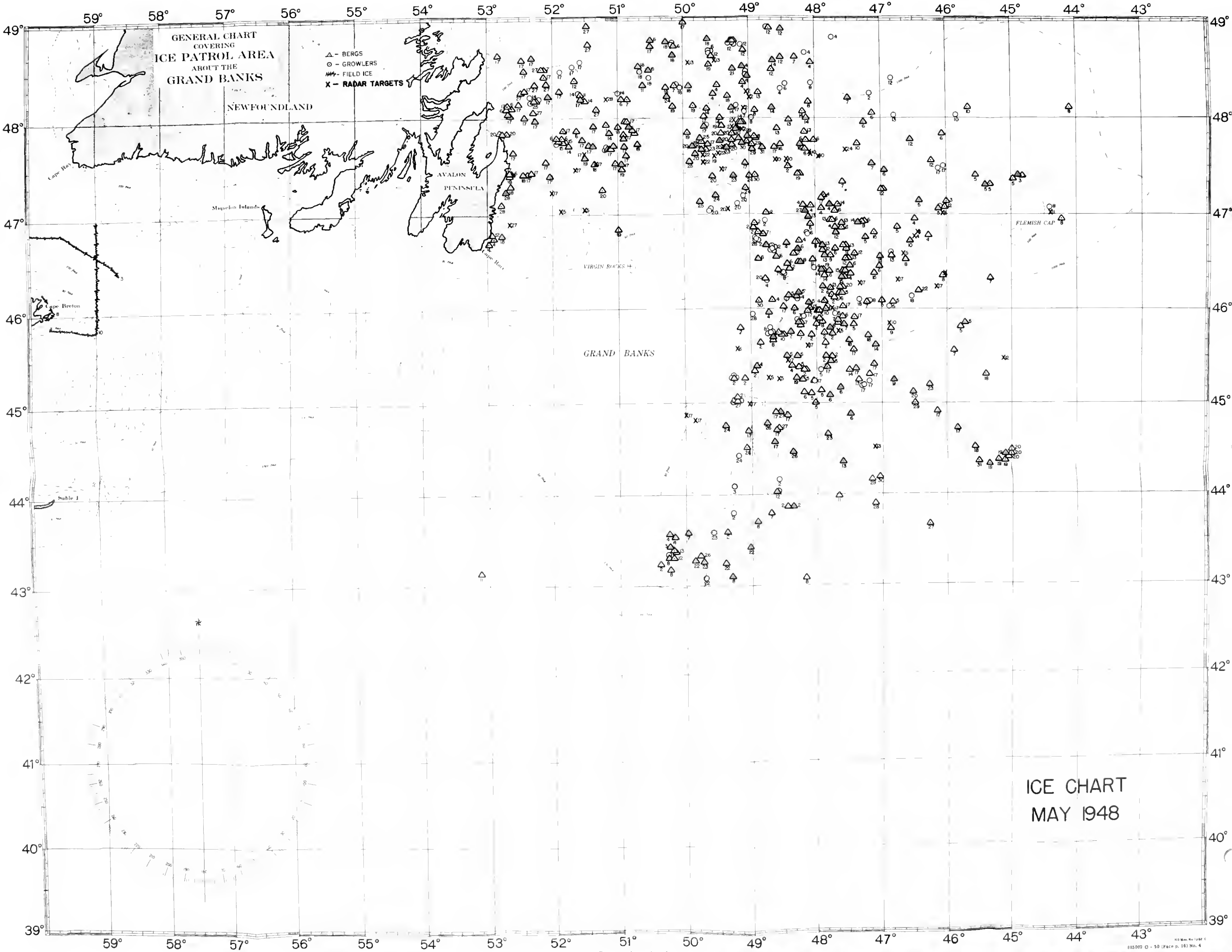

Figure 5.—Ice conditions May 1948. Figures indicate day of month ice was sighted or reported

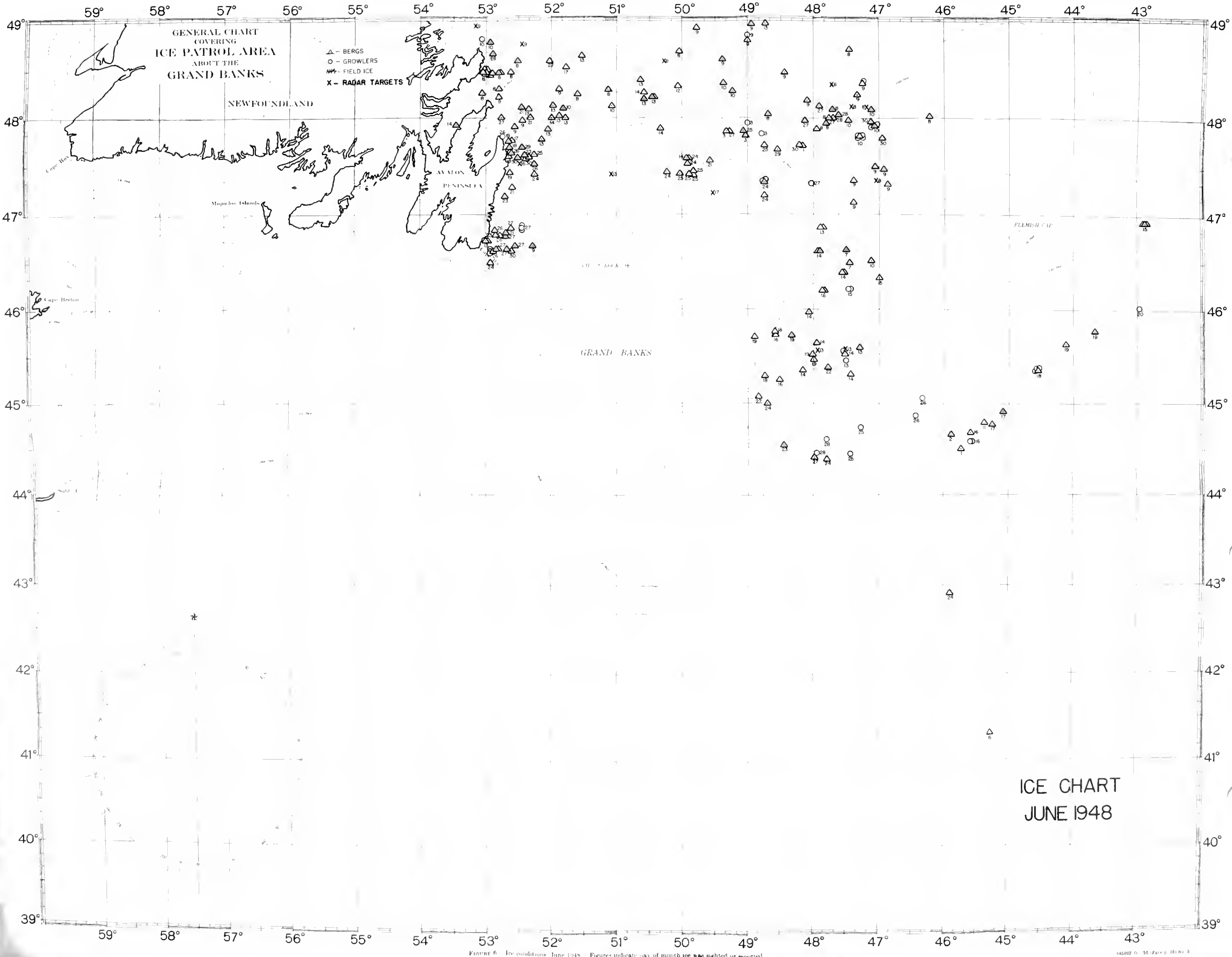

FIGURE 6. Ice conditions June 1948. Figures indicate day of month ice was sighted or reported.

was camera-equipped and photographs were made when possible. The actual census, however, depended upon visual observation. The USCGC *Ingham* provided surface support and weather data, including upper air observations from a central location in Baffin Bay.

The results of the 1948 census are shown in figures 7, 8, 9, 10, and 11. Figure 7 shows the different flight tracks. A total of nine flights were made. The key to the numbered flights appearing in figure 7 is as follows:

Flight No.	Date	Time in flight	Flight No.	Date	Time in flight
		Hours			*Hours*
1	11 July 1948	7.1	6	28 July 1948	9.6
2	15 July 1948	7.3	7	29 July 1948	7.0
3	26 July 1948	7.3	8	29 July 1948	9.6
4	26 July 1948	4.4	9	30 July 1948	5.2
5	27 July 1948	5.4			

Figure 8 shows the results of the 1948 census on a single chart covering the entire area. There appear to be two major concentrations in the area in addition to the bergs distributed along the eastern side of Baffin Bay from Disko Bay to Cape Melville. Of these two major concentrations, one is located in the vicinity of Cape Dier, and the other to the north between Cape York and Jones Sound. Figure 8 also shows the field ice limits. Figures 9, 10, and 11 are on a different scale than is figure 8 and show more clearly the details along the west coast of Greenland from Disko Island to Smith Sound. They are intended to show the distribution of bergs in the fjords and along the glacier fronts.

As most of the sea-going bergs which later make their appearance in the Grand Banks region come from the west Greenland glaciers of Disko Bay and northward, it has been assumed that any summer's crop would be found that summer distributed from Disko to Melville Bay. It also has been assumed from what is known of the rates of drift south of Davis Strait that in any summer the group of bergs which are to reach the Grand Banks the following season will be centered just north of Cape Dier. It therefore has been reasoned that if no other concentrations of bergs are present, the usual travel time from glacier to Grand Banks is 2 years; and that if other additional concentrations are found the travel time in years may be taken as greater than two by the number of such additional concentrations. The 1940 census pointed to a 2-year period. The 1948 survey seems to indicate a 3-year period.

In deducing travel time from the number of concentrations found in a census and the basic assumption that a concentration represents a year-class, it must be kept in mind that some year-classes may not be present as recognizable concentrations during any one census if: (1) A year-class of bergs is destroyed in transit around Baffin Bay; (2) the

number of bergs calved and subsequently released from the fjords during a given summer is so small that its progress as a concentration cannot be followed, or (3) the initial concentration representing a year-class becomes dispersed so as not to be recognizable as a concentration. Since the two censuses so far recorded showed different numbers of concentrations, it is considered that the travel time is not less than that indicated by the census having the greater number of concentrations (1948). Thus we arrive at a tentative value of not less than 3 years; and are required to relate the shortages found in the 1940 census to one or more of the three reducing factors enumerated above operating prior to 1940, and to the small numbers of bergs arriving in the Grand Banks area during the seasons of 1941 and 1942 (2 and 30 respectively).

A single isolated census does not give sufficient information on which to base a final conclusion. More positive indications of the length of the usual travel time might be inferred, however, if the censuses were repeated annually for at least three successive years. In addition, from such a series it may be possible to establish a figure for the normal attrition of bergs during their journey from their fjords to the Grand Banks, and to obtain possible clues as to the causes of greater or less than normal attrition. If practicable, therefore, the ice census of Baffin Bay will be repeated during the summers of 1949 and 1950, after which the results of the three surveys will be examined in greater details.

WEATHER

During the two previous postwar seasons the weather program of the International Ice Patrol consisted of the surface vessel on patrol taking three hourly synoptic surface weather observations, upper air observations which included rawins, radio-sondes and pibals, and their subsequent transmission to the U. S. Weather Bureau, Washington, D. C. In 1948 an identical program was carried out where possible. Equipment and personnel curtailed the program on the USCGC *Evergreen* to the three hourly synoptic surface weather observations. On the USCGC *Macoma* equipment was the limiting factor and in addition to the three hourly synoptic surface weather observations it was possible to take radiosonde observations. The *Mendota* was equipped and staffed to carry out the full program.

The importance of carrying out the full meteorological program of the International Ice Patrol becomes immediately apparent with the statement that during 1946, 1947, and 1948, ocean weather station C, at 52°45′ N., 35°30′ W., was the closest ocean weather station to shore stations along the western side of the North Atlantic. Although the network of ocean weather stations in the North Atlantic contains station D at 45°00′ N., 45°00′ W., at the close of the 1948 season this station was still unoccupied. Tentative plans call for ocean weather station D to be manned early in 1949 so that the weather program of the International

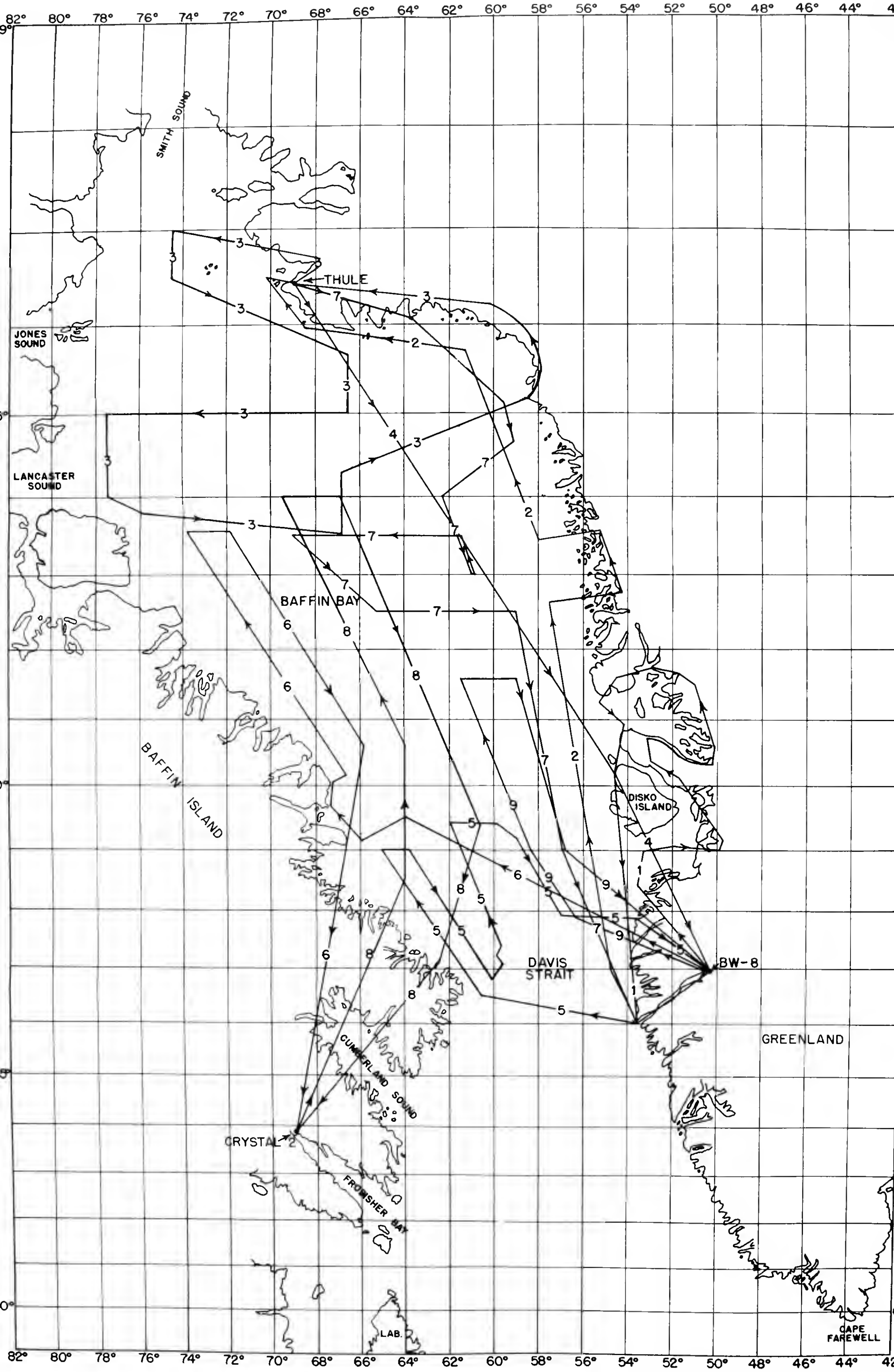

FIGURE 7.—Track chart showing flights made during 1948 iceberg census of Baffin Bay.

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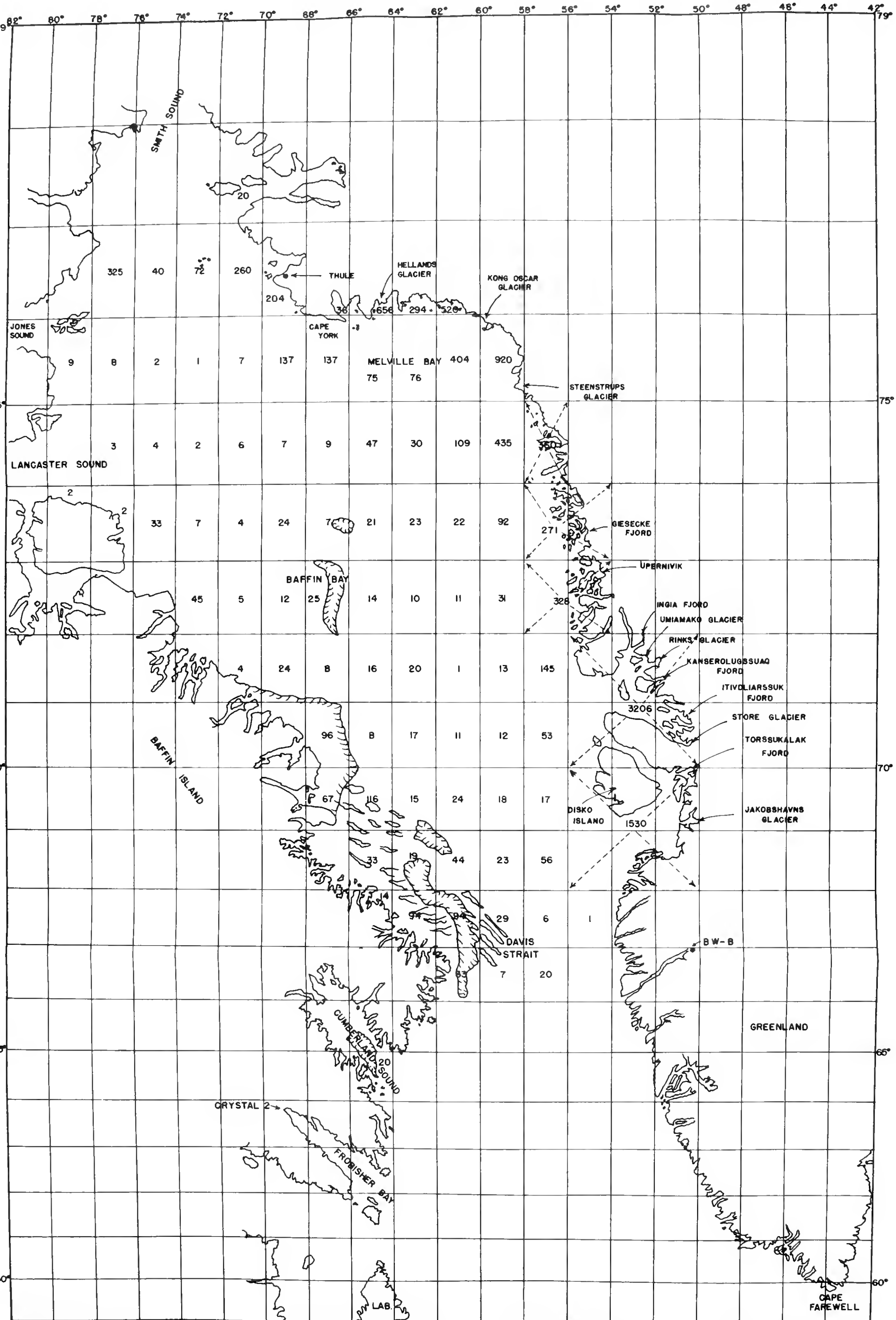

FIGURE 8.—Distribution of icebergs in West Greenland fjords, Baffin Bay and Davis Strait, 11–30 July 1948.

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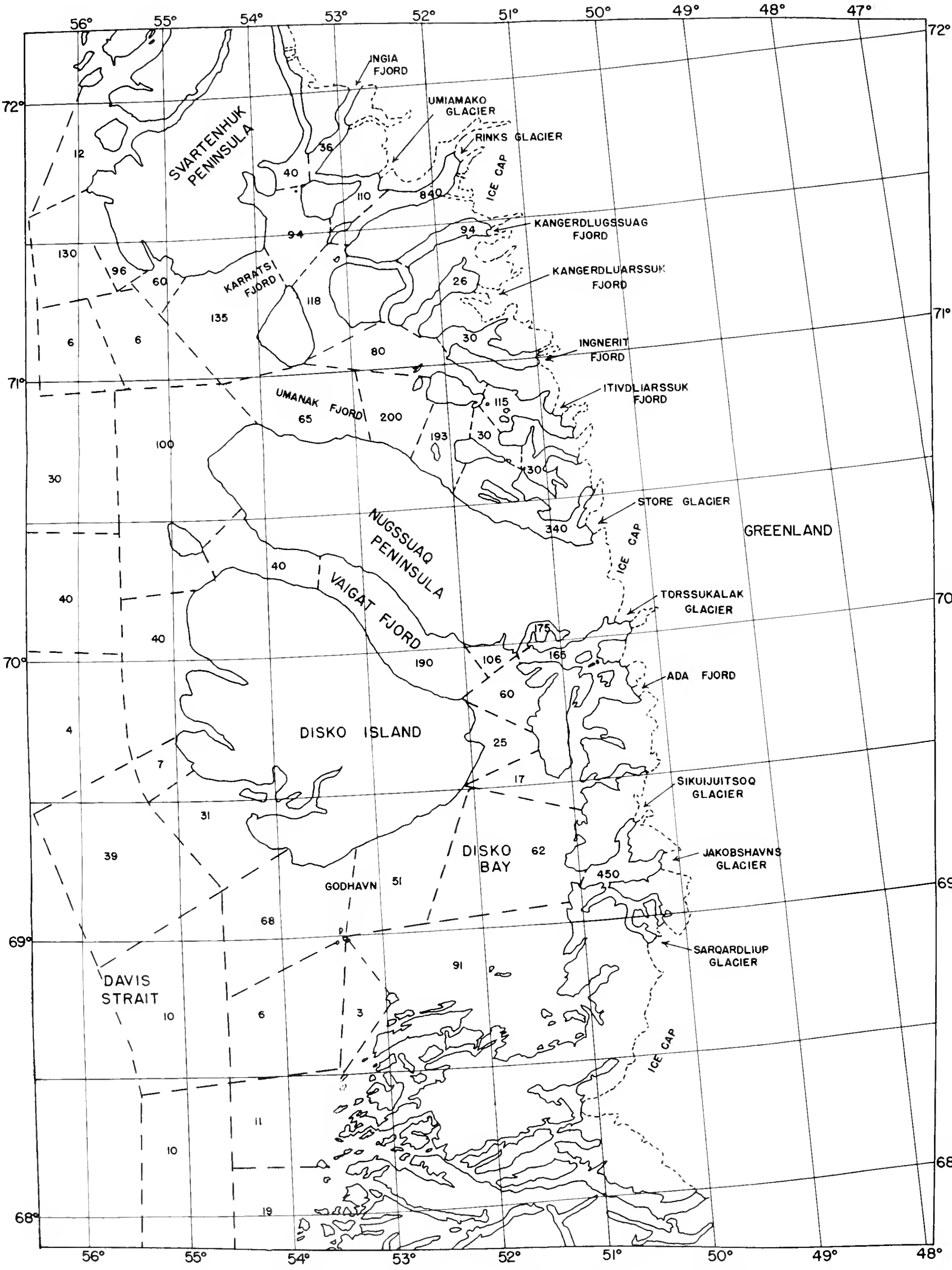

FIGURE 9.—Distribution of icebergs in West Greenland fjords, from 68° N., to Ingia Fjord.

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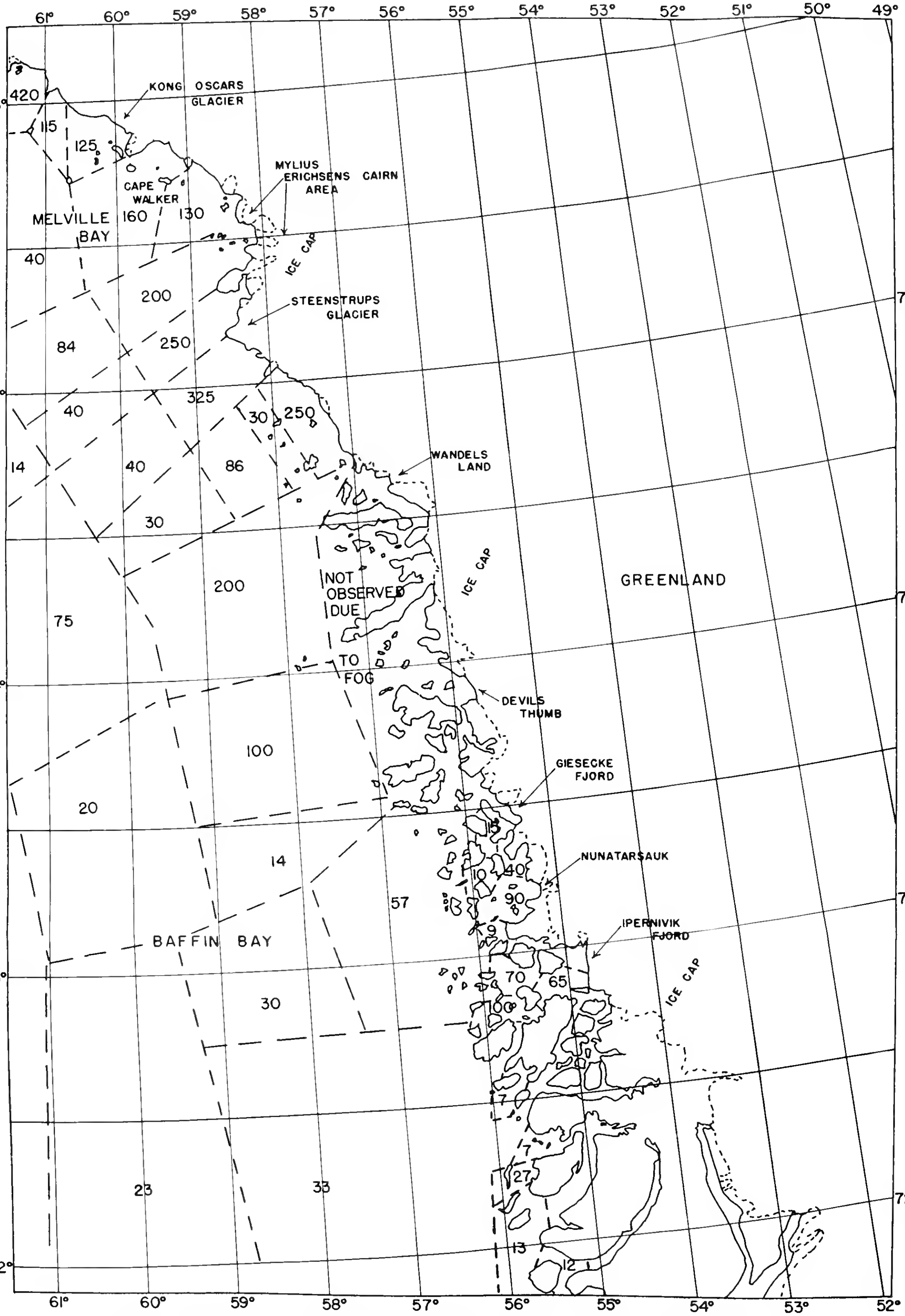

FIGURE 10.—Distribution of icebergs in West Greenland fjords from Ingia Fjord to Kong Oscar's Glacier.

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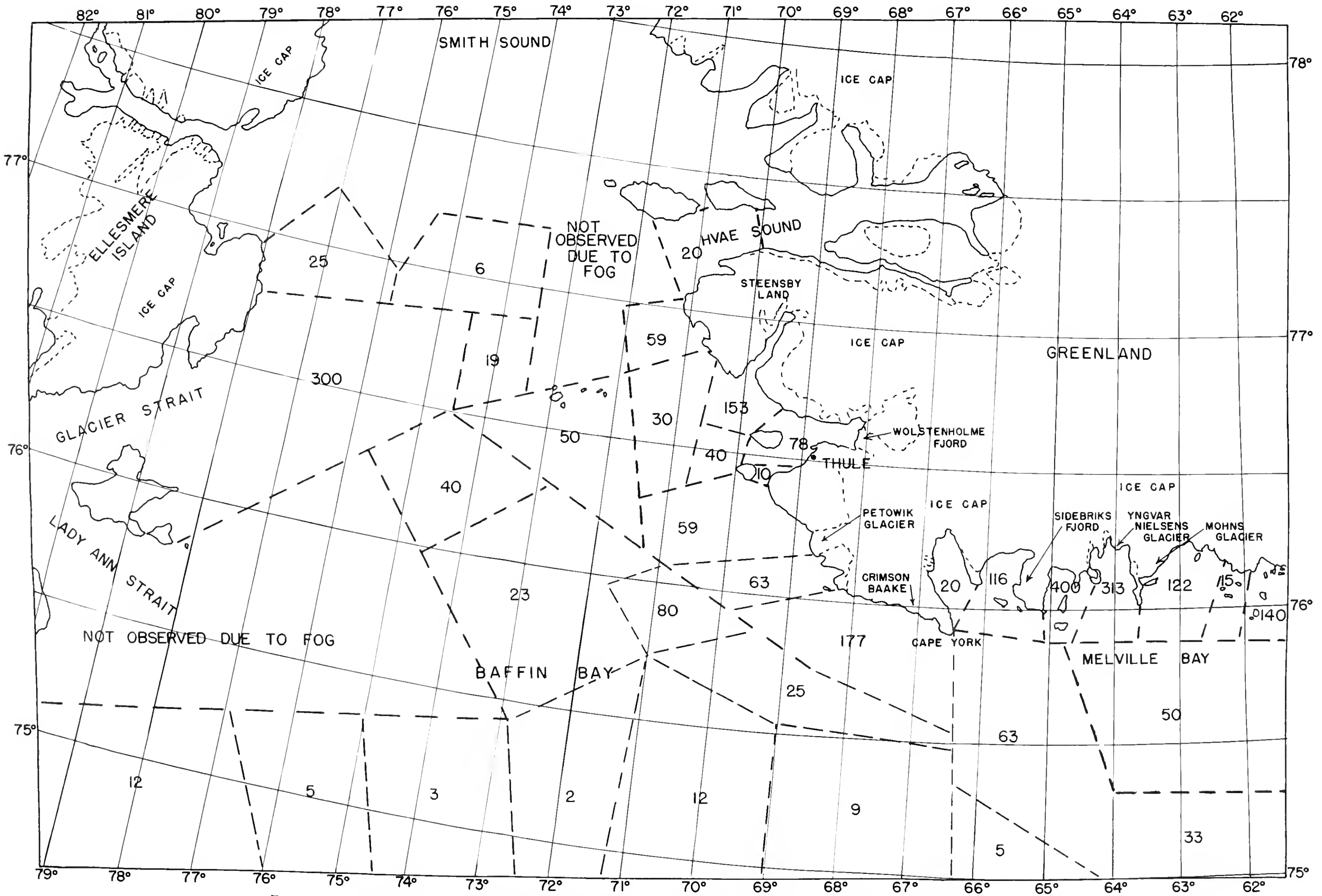

FIGURE 11.—Distribution of icebergs in West Greenland fjords and eastern Baffin Bay from Melville Bay to Lady Ann Strait.

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Ice patrol in 1949 will in all probability consist of only the synoptic surface weather observations by the surface patrol vessels and the oceanographic vessel, omitting all upper air observations.

COMMUNICATIONS

In 1948 the following daily schedule of ice broadcasts to shipping was maintained from 15 March until 7 July. Each broadcast was preceded by a general call on 500 kilocycles after which the transmitting station (Radio Argentia, NWP) announced the NIDK ice bulletin with the operating signal to shift to 480 and 8,100 kilocycles. After shifting to these frequencies there followed a 30-second period of test signals to permit receiver tuning. The ice bulletin was then broadcast twice, the first transmission being made at 15 words per minute and the second transmission at 25 words per minute, with a 2-minute interval between transmissions.

Time (G.c.t.)	Frequency (kilocycles)	Emission
0118	480	A2
0118	8,100	A1
1318	480	A2
1318	8,100	A1

The above-mentioned times of transmission have been selected so that each bulletin would contain the maximum amount of recently received information, would be transmitted with the least number of breaks due to silent periods, and would be completed during the hours when the operators on single-operator ships were on duty. The morning broadcast is timed so as to include a digest of the reports which increase in number during the first few hours after daylight, with its improved visibility, and the evening broadcast, so as to include the results of any aerial reconnaissance made during the day, since the planes normally return to base shortly before dusk.

Each bulletin followed the same general pattern. The bulletin started with the position(s) of the southernmost known ice. Following this, the most recent ice information was given first, listing the ice from south to north and east to west. As in previous years, a distinction was made between ice sighted by units of the International Ice Patrol, i. e., the surface vessel on patrol, the oceanographic vessel, or one of the ice patrol aircraft, and that sighted by all other units. The former was listed as ice sighted and the latter as ice reported. To avoid confusion during periods of poor radio reception, all reports of obstructions such as buoys, logs, mines, etc., were placed at the end of the bulletin.

The importance of communications to the success of the International Service of Ice Observation and Ice Patrol cannot be overly stressed. In the past, criticism and comment from maritime agencies and vessels making use of this service has resulted in increased efficiency and use-

fulness. They should be addressed to the Commandant, U. S. Coast Guard, Washington 25, D. C. Thanks are again expressed to those agencies and vessels whose wholehearted cooperation makes this international service possible.

CRUISE SUMMARIES

First Cruise, Mendota, 26 April to 14 May 1948

The *Mendota* departed from Argentia, Newfoundland, at 2031 G.c.t., 26 April 1948, for an ice observation cruise in the Grand Banks area. At this time the critical area was in the vicinity of the Tail of the Banks. Consequently this area was scouted out initially with negative results. The remainder of the cruise was confined to the area between the 43d and 46th parallels along the eastern slope of the Grand Banks. Figure 12 shows all ice sighted with its subsequent drift, if determined, together with the complete track plot and surface isotherms for the period of the cruise.

At 1200 G.c.t., 14 May, the continuous surface vessel patrol was inaugurated at which time the *Mocoma* relieved the *Mendota* at 45°02′ N., 52°29′ W. The *Mendota* then set course for St. Johns, Newfoundland, arriving in that port at 1117 G.c.t., 15 May 1948. After a brief stay in St. Johns, Newfoundland, the *Mendota* departed at 2116 G.c.t., 17 May, for Argentia, Newfoundland, arriving there at 1217 G.c.t., 18 May 1948.

The following is a summary of water-temperatures, ice, and obstruction reports received during this cruise:

Number of ice reports received	128
Number of vessels furnishing ice reports	76
Number of water-temperature reports received	577
Number of vessels furnishing water-temperature reports	148
Number of obstruction reports received	0
Number of vessels furnished special information	23

During the period of this cruise, patrol vessel activity was supplemented by aerial ice observation flights as follows: On 27 April an attempt was made to search the area south and east of the Tail of the Banks. Most of the area was blanketed by a layer of dense surface fog. Effective visual observation was limited to that portion of the searched area south of 42°40′ N. An attempt was made to cover this area again on the 29th, effective coverage being limited to that portion of the area south of 44° N. Weather forecasts for 2 and 4 May were favorable, but both flights accomplished little because of unfavorable weather conditions encountered. On 5 May a flight effectively covered the entire area off the eastern edge of the banks from 42° N., to Flemish Cap. On the 6th a flight attempted to extend the area scouted on the 5th northward over the northern slope of Flemish Cap. However, visibility was limited in this area. No further aerial reconnaissance was possible until 12 May.

Two flights were attempted on this day with excellent visibility north of 46° N., between the 47th meridian and Flemish Cap. The area between 44° N., and 45°30′ N., was obscured by fog. South of 44° N., coverage was complete to the Tail of the Banks. The total number of flights for the period was 9, involving 79 hours time in flight.

Second Cruise, Mocoma, 14 May to 22 May 1948

The *Mocoma* departed from Argentia, Newfoundland, at 2108 G.c.t., 13 May 1948, for ice patrol. The *Mendota* was met and relieved at 1200 G.c.t., 14 May, in the vicinity of 45° N., 53° W. This marked the inauguration of the continuous surface vessel patrol for 1948. During the first part of the cruise the area from the Tail of the Banks to the 45th parallel along the southeastern edge of the Grand Banks was scouted out. A berg was encountered at 45°00′ N., 46°18′ W. This berg, with continued southeasterly drift, could have become a menace to vessels traveling on scheduled United States-European track B. The *Mocoma* drifted with this berg from the 17th to the 20th of May. Initially its drift was to the southeast, but by the 20th it was being set to the north and had deteriorated considerably. It was evident that this berg could not long survive the relatively high sea-water temperatures (58° F.) in its vicinity. The *Mocoma* then proceeded to the eastern edge of the Grand Banks and scouted out the area between the 44th parallel and 44°25′ N. Results were negative. Figure 13 shows all ice sighted with its subsequent drift, if determined, together with the complete track plot and surface isotherms for the period of the cruise.

At 1020 G.c.t., 22 May, the *Mendota* relieved the *Mocoma* and the *Mocoma* set course for Argentia, Newfoundland, arriving there on 23 May 1948.

Following is a summary of water-temperatures, ice and obstruction reports received during this cruise:

Number of ice reports received	91
Number of vessels furnishing ice reports	43
Number of water-temperature reports received	200
Number of vessels furnishing water-temperature reports	90
Number of obstruction reports received	4
Number of vessels furnished special information	28

During this period of this cruise the surface patrol vessel activity was supplemented by the following aerial ice observation flights: On 17 May two flights were made, one attempting coverage along the southeastern edge of the Grand Banks between 43°30′ N., and 47° N., and the other to the north along the northeastern slope of the Grank Banks as far to the east as Flemish Cap. No other aerial observation flights were possible during the period of the second cruise because of adverse weather conditions. To summarize, the total number of flights was 2, involving 19.5 hours in flight.

The *Mendota* departed from Argentia, Newfoundland, at 1035 G.c.t., 21 May 1948, for ice patrol. The *Mocoma* was met and relieved at 1020 G.c.t., 22 May, in the vicinity of 44°30′ N., 50°00′ W. The *Mendota* immediately headed southeast from the relief point, searching for the southermost ice. A ladder search was conducted along the southeastern edge of the Grand Banks from 43° N., to 45° N., between the edge of the banks and the 48th meridian. While conducting this ladder search, seven bergs and one growler were sighted. On 27 May a berg was reported by the S. S. *Howard Stansbury* at 43°40′ N., 46°19′ W. The *Mendota* shaped course for this position and conducted an expanding square search for the berg. On the 28th the berg was located at 43°53′ N., 47°07′ W. The *Mendota* drifted with this berg until 6 June, except for a short period on the 29th of May. It was necessary to leave the berg for a short period on the 29th in order to contact the S. S. *Adabelle Lykes* and give medical assistance to one of her crew members. The drift of the berg was carefully observed and its path is shown in figure 14. The berg finally disintegrated on the 6th of June at 44°38′ N., 43°48′ W. The *Mendota* then set a course to the west preparatory to contacting the *Mocoma*. At 1330 G.c.t. on 6 June, while enroute to rendezvous with the *Mocoma*, an SOS was intercepted from the S. S. *Nevada*, a Danish merchant vessel, advising that she had collided with an iceberg in position 48°12′ N., 52°15′ W. Details of this incident are discussed in the section of this Bulletin entitled "International Ice Patrol, 1948."

At 2225 G.c.t. on the 6th of June, the *Mendota* rendezvoused with the *Mocoma*. At 2307 G.c.t., 6 June, the *Mocoma* relieved the *Mendota* and the *Mendota* set course for Argentia, Newfoundland, arriving there on 7 June 1948. Figure 14 shows the track plot of the cruise, all ice sighted and its subsequent drift, if determined, and surface isotherms for the period of the cruise.

Following is a summary of water-temperatures, ice and obstruction reports received during this cruise:

Number of ice reports received	51
Number of vessels furnishing ice reports	40
Number of water-temperature reports received	662
Number of vessels furnishing water-temperature reports	166
Number of obstruction reports received	0
Number of vessels furnished special information	15

During the period of this cruise no aerial reconnaissance was accomplished. This period proved to be the most extended period of unfavorable observing weather experienced since the resumption of ice patrol in 1946. With the exception of the 22d of May, all forecasts for the area over the Grand Banks and the eastern and southern slopes of the banks were unfavorable. The forecast for the 22d indicated that a partial coverage of the area might be possible. No flight was attempted, however, due to the questionable effectiveness of such a flight and also

to the fact that a rather complete coverage had been obtained on the 17th of May. Unfortunately, undesirable weather conditions prevailed until the 7th of June.

Fourth Cruise, Mocoma, 6 June to 22 June 1948

The *Mocoma* departed from Argentia, Newfoundland, at 1248 G.c.t., 5 June for ice patrol. On the 6th, while proceeding to rendezvous with the *Mendota*, an SOS was received from the S. S. *Nevada* advising that she had collided with an iceberg about 40 miles northeast of St. Johns, Newfoundland. The *Mocoma* immediately increased speed and headed toward the *Nevada*. Two hours later the *Nevada* advised that her collision bulkhead was holding and that she was proceeding toward St. Johns at 4 knots. Additional details of this incident are contained elsewhere in this Bulletin in the section entitled "International Ice Patrol, 1948." The *Mocoma* then altered course and headed for the rendezvous point. The *Mendota* was met at 2225 G.c.t., 6 June, and relieved at 2307 G.c.t., 6 June, at 43°34′ N., 49°46′ W. Meantime, early on the 6th, a ship reported a berg at 41°19′ N., 45°16′ W. Upon relief of the *Mendota*, the *Mocoma* immediately headed for this position, arriving there on the 8th. Between the 8th and the 11th a triangle bounded by lines connecting the following points was searched out with negative results: 41°19′ N., 45°22′ W.; 41°27′ N., 43°08′ W.; 43°30′ N., 43°48′ W. It is considered highly likely that what the reporting ship actually saw was another ship. Reasons for this are given elsewhere in this Bulletin in the summary of Ice Conditions, 1948.

The *Mocoma*, after failing to locate this berg, headed to the west toward the Tail of the Banks. The area along the eastern edge of the banks from the Tail of the Banks to the 44th parallel was scouted out with negative results. An ice patrol plane had sighted a berg at 44°47′ N., 46°15′ W., on the 14th and so course was set on the 15th to intercept this berg and drift with it. This berg was located on the 16th at 44°40′ N., 45°40′ W. The *Mocoma* drifted with this berg until the 20th. By this time it had completely disintegrated. Its path is shown in figure 15. The *Mocoma* then headed west to rendezvous with the *Mendota*.

At 1140 G.c.t., 22 June, the *Mendota* was met and relief effected at 45°21′ N., 50°23′ W. The *Mocoma* then set course for Argentia, Newfoundland, arriving there on the 23d. Figure 15 shows the track plot of the cruise, all ice sighted, and its subsequent drift, if determined, and surface isotherms for the period of the cruise.

Following is a summary of water-temperatures, ice and obstructions reports received during this cruise:

Number of ice reports received	45
Number of vessels furnishing ice reports	34
Number of water-temperature reports received	720
Number of vessels furnishing water-temperature reports	209
Number of obstruction reports received	8
Number of vessels furnished special information	55

During the period of this cruise, patrol vessel activity was supplemented by aerial ice observation flights as follows: On 7 June, two flights were made. Available weather information indicated that adverse scouting conditions would prevail in the area south and southeast of the banks. Because of this no attempt was made on the 7th to locate the berg reported on the 6th at 41°19′ N., 45°16′ W. Instead, search courses were laid out covering the eastern slope of the banks which had not been reconnoitered since the 17th of May. Upon reaching the search area it was found that weather conditions were not nearly so adverse as had been forecast. However, the additional distance required to reach the reported berg and to conduct a search so as to locate or establish positive evidence of its absence was then beyond the safe endurance of either aircraft. As has been previously stated, further consideration of all facts established a measure of doubt as to the identity of the object reported as a berg.

One flight was made on the 8th in an attempt to scout out the northern edge of the banks east to Flemish Cap. It was necessary to abandon the attempt after several hours, however, because of the extremely poor visibility conditions encountered. On the 9th, another flight was made to scout out the same area. Again visibility was extremely poor and that the flight was partially successful was due to the radar which functioned excellently that day. On the 13th, an attempt was made to scout out the area between the Tail of the Banks and Flemish Cap but was abandoned shortly after takeoff due to the poor visibility encountered. On the 14th, one flight was made. The southernmost ice located was at 44°47′ N., 46°15′ W. Heavy rain showers and limited visibilities, however, were encountered in a large part of the area and much of the coverage depended upon radar detection and subsequent visual identification of floating objects. On the 15th, one flight was made to scout out the area along the northern slope of the banks as far to the east as Flemish Cap and south to the 46th parallel. It was necessary to abandon the flight shortly after takeoff, however, because of poor visibility. On the 18th, weather conditions were favorable except in the area in the vicinity of Flemish Cap. On that day two flights were made and no bergs were sighted in position to menace either track B or C, B being the effective track until 1 July.

Two flights were planned for the 19th. However, only one was made on the 19th and the other on the 20th. The flight on the 19th covered the area along the northern slope of the banks east to Flemish Cap. On the 20th, the area along the eastern slope south to the Tail of the Banks was covered, but only a small area of clear weather was found. On the 22d, two flights were made and the entire area along the eastern and northeastern slope of the banks was covered. To summarize, 13 flights were made during this period involving 100.8 hours of time in flight.

Fifth Cruise, Mendota, 22 June to 3 July 1948

The *Mendota* departed from Argentia, Newfoundland, at 1538 G.c.t.,

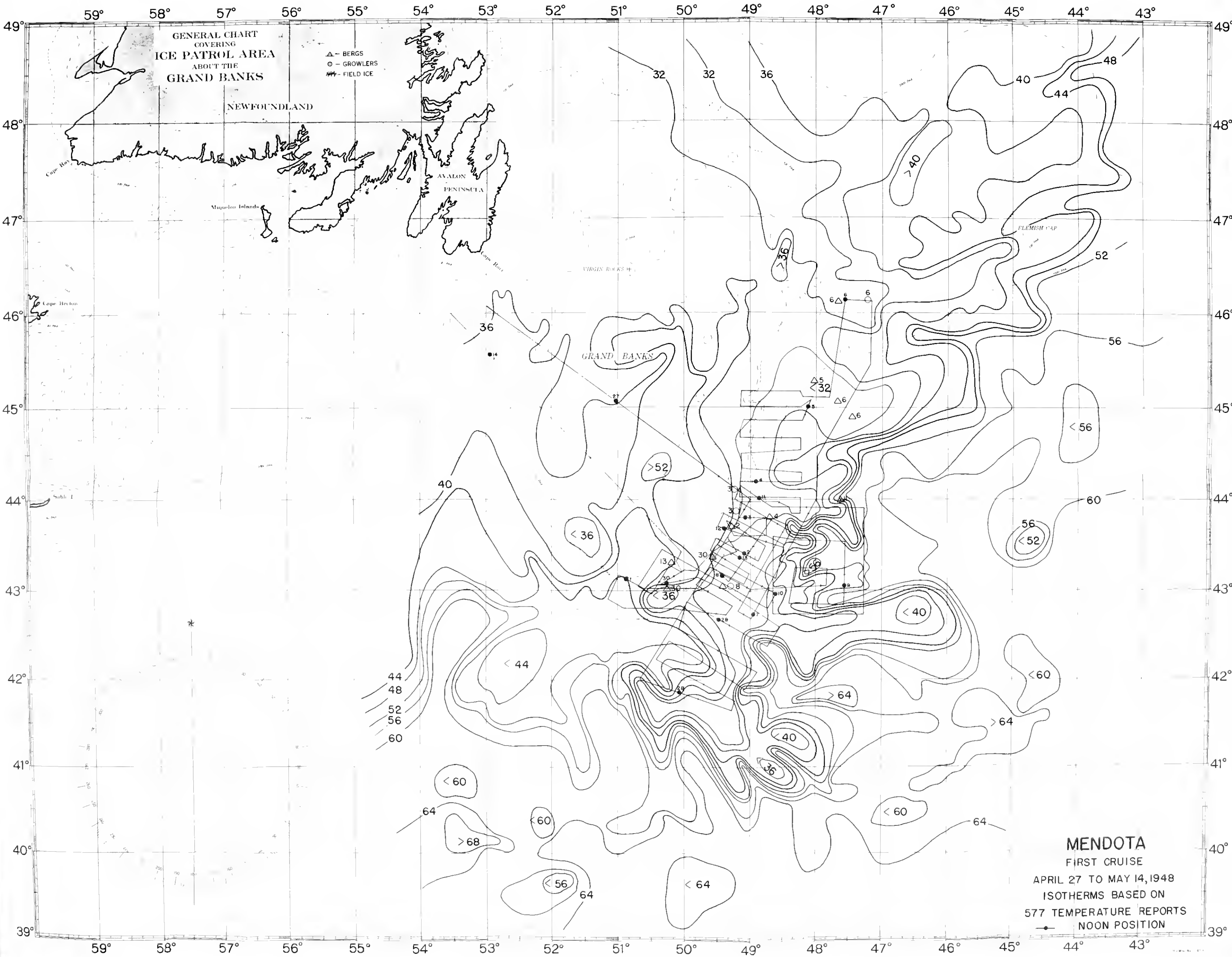

Figure 12.—First cruise, ice observation *Mendota*, 27 April–14 May 1948, showing surface isotherms.

885002 O - 50 (Face p. 24) No. 1

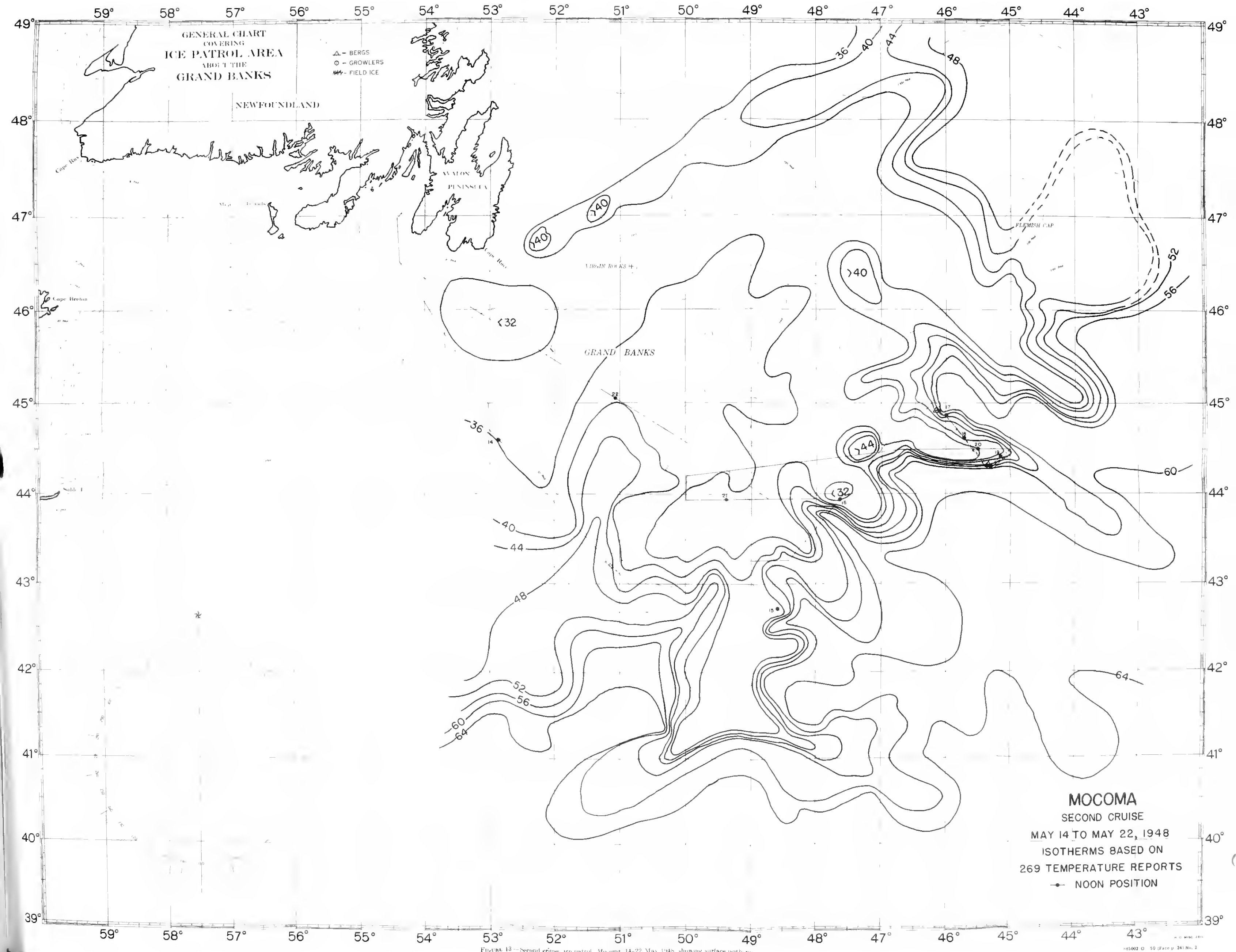

FIGURE 13.—Second cruise ice patrol, *Mocoma* 14–22 May 1948 showing surface isotherms

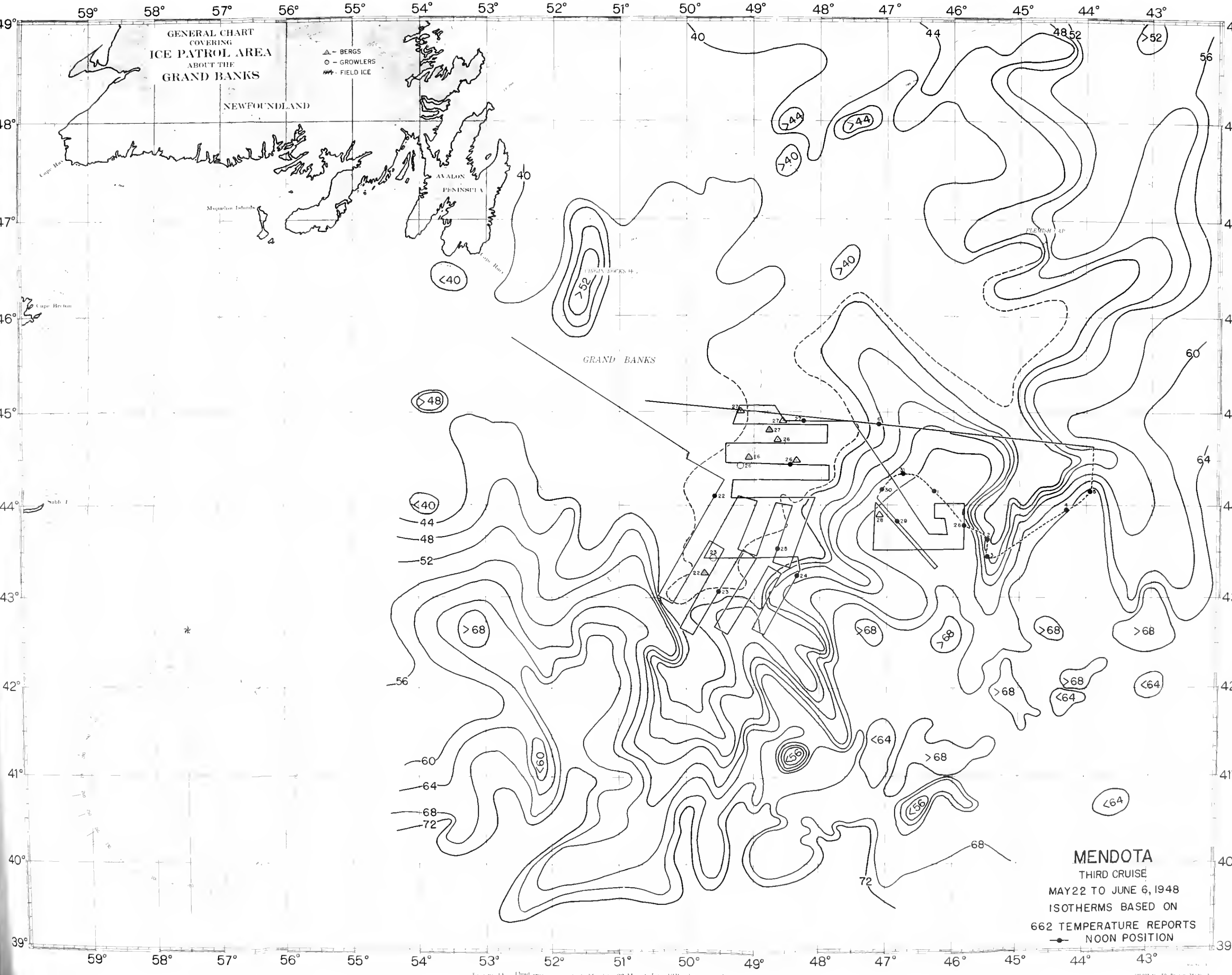

FIGURE 14.—Third cruise, ice patrol Mendota, 22 May–6 June 1948, showing surface isotherms.

885002 O - 50 (Face p. 24) No. 3

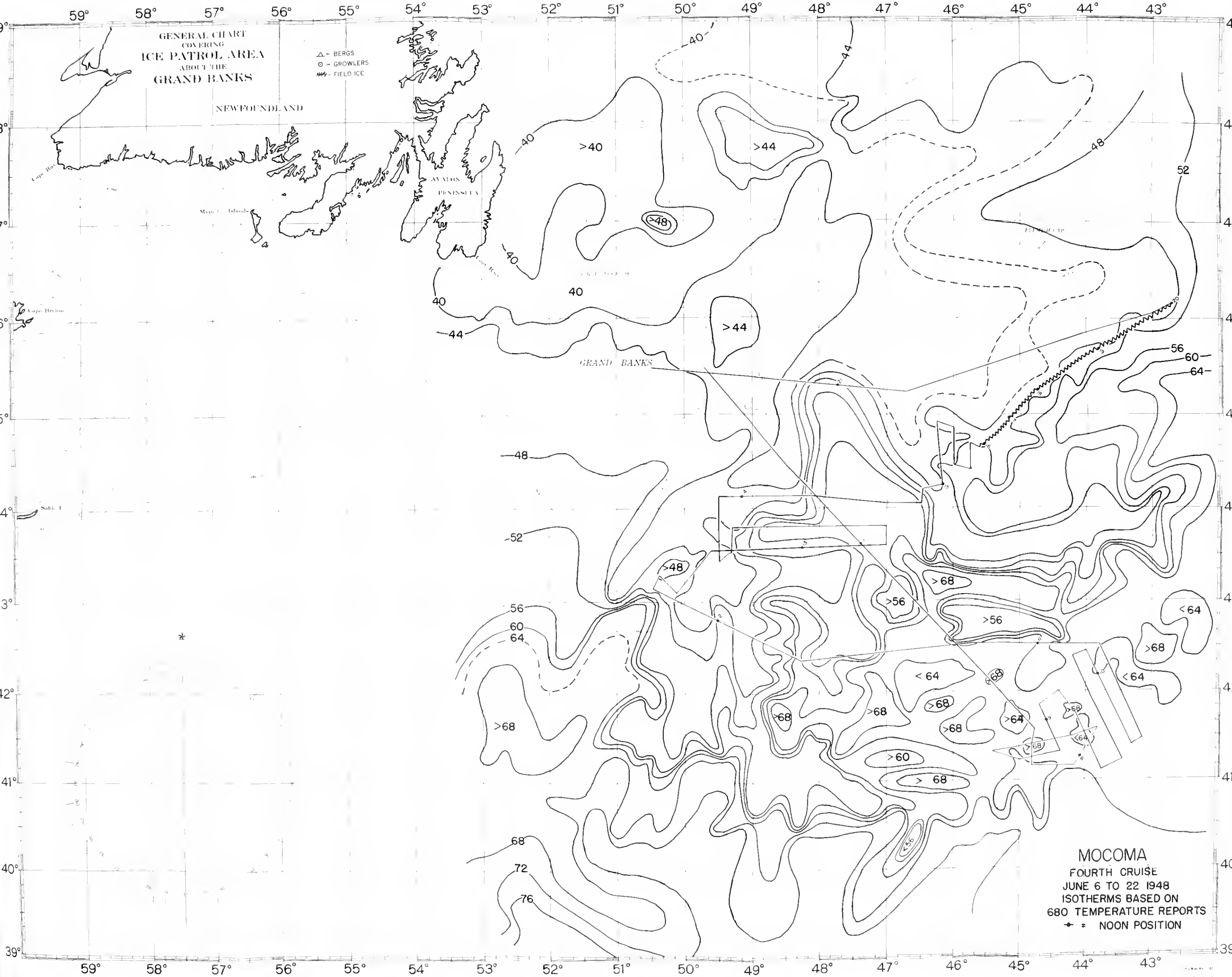

FIGURE 15.—Fourth cruise ice patrol Mocoma 6-22 June 1948 showing surface isotherms.

885002 O - 50 (Face p. 24) No. 4

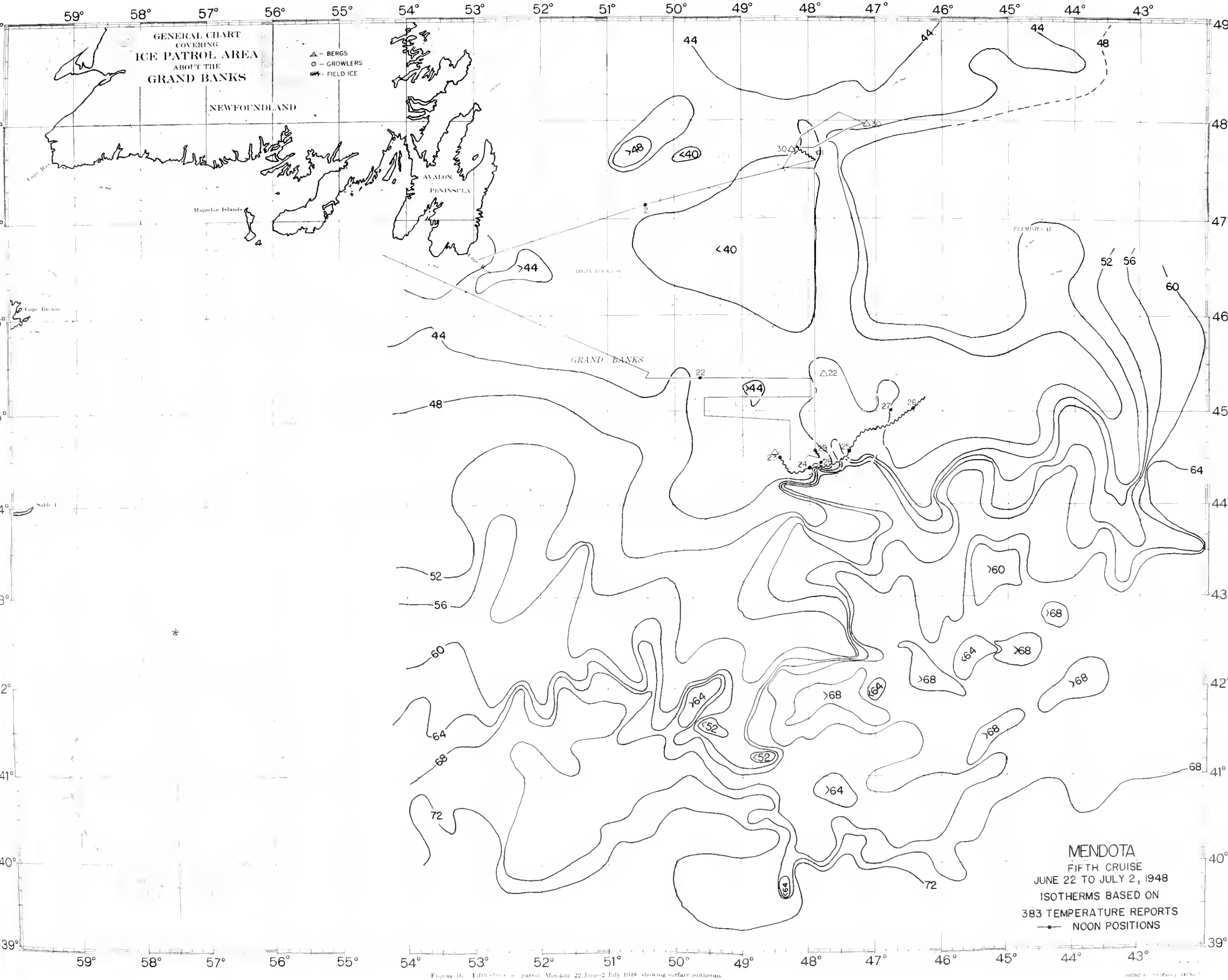

Figure 16. Fifth cruise ice patrol Mendota 22 June–2 July 1948 showing surface isotherms

21 June for ice patrol. The *Mocoma* was met and relieved at 1140 G.c.t., 22 June, at position 45°21′ N., 50°23′ W. The *Mendota* commenced searching along the eastern slope of the banks and on the 23d sighted a berg at 44°33′ N., 48°36′ W. The *Mendota* drifted with this berg until the 27th. Its path is shown in figure 16. By the 27th it had been reduced in size to the point of harmlessness. Therefore, on the 27th the *Mendota* set course to the southwest. On the 28th a small berg was located at 44°28′ N., 47°57′ W. The *Mendota* then commenced searching upstream along the eastern slope of the banks. One berg was located near 48° N., 47° W., and another near 48° N., 49° W. These bergs were being set to the east and consequently represented little or no menace to track C. Upon receipt of orders from Commander, International Ice Patrol, the continuous surface vessel patrol for 1948 was terminated at 2245 G.c.t., 2 July, at position 46°33′ N., 53°00′ W. The *Mendota* immediately departed the area and set course for Argentia, Newfoundland, arriving there on the 3d of July. Figure 16 shows the track plot of the cruise, all ice sighted and its subsequent drift, if determined, and surface isotherms for the period of the cruise.

Following is a summary of water-temperatures, ice and obstruction reports received during this cruise:

Number of ice reports received	23
Number of vessels furnishing ice reports	17
Number of water-temperature reports received	383
Number of vessels furnishing water-temperature reports	110
Number of obstruction reports received	11
Number of vessels furnished special information	7

During the period of this cruise, patrol vessel activity was supplemented by aerial ice observation flights as follows: On the 24th, two flights were made. Good to excellent weather conditions prevailed throughout almost the entire search area. Only five bergs were located south of the 47th parallel and there was considerable debris in the vicinity of all ice observed. On the 27th and 28th, the same area was covered and in addition was extended northward past the 54th parallel. At this time the only known ice remaining that might become a menace to track C, following the schedule shift of this track on 1 July, were the bergs sighted on the 27th at 47°54′ N., 49°17′ W., and at 47°57′ N., 47°49′ W. As stated previously, the *Mendota* determined the set of these bergs to be easterly. Therefore there remained little likelihood that either would menace track C. With the approval of the Commandant of the Coast Guard, shipping was advised that the continuous surface vessel patrol would be discontinued on 2 July. To summarize, a total of 6 flights were made involving 44.8 hours time in flight.

Table of Ice and Obstruction Reports South of 50° N., 1948

No.	Date	Name of vessel	North latitude ° ′	West longitude ° ′	Description
1	Feb. 10	Ice Patrol plane	From St. Esprit Island to		Approximate outer limits field ice.
			45 35	60 25	
			46 07	58 43	
			46 50	59 35	
			Southeast of Scatari Island North of 46° N.		A few small strings and patches of light field ice. The outer portion of the field contained patches and strings of heavy field ice with some pans exceeding 100 feet in diameter.
			46 40	59 43	At this position a narrow belt of heavy pans, some of which were more than 1000 feet in diameter, extended from NNW to SSE. Inshore of this belt light slush and very light sheet ice was present near the beach. Sydney Harbor was frozen over.
2	Feb. 14	do	48 17	52 40	Light sludge and two pans.
3	Feb. 16	do	From 45 40	60 13	Light sludge with heavier field ice north of 46° 05′ N.
			to 46 05	59 05	
			46 30	59 20	20-foot glacons in vicinity.
			46 40	59 13	100- to 150-foot glacons.
			47 00	59 25	500- to 1,000-foot glacons. South of 46°20′ N., light sludge with 7/10 cover. North of 46°20′ N., heavy field ice with 9/10 cover.
4	Feb. 17	do	From 48 28	52 45	Light slush and sludge ice.
			to 48 30	51 18	
			49 10	52 00	
					North of 49°30′ N., heavier field ice with some 20- to 30-foot glacons.
			From 51 00	52 25	Outer limits of field ice.
			to 49 20	51 15	
			48 30	51 18	
			48 28	52 45	
5	Feb. 20	do	48 30	51 10	Several strings of slush and sludge extending toward northwest.
6	Feb. 25	do	From Cape Bonavista to Cape Spear		Streaks and patches light slush ice scattered from beach to over 70 miles seaward.
			48 20	52 40	Outer limits field ice. Outer and southern part of this field is light winter ice mixed with slush.
			to 48 40	52 10	
			49 35	51 52	
			50 40	52 30	
			through 50 55	52 52	
7	Feb. 26	do	From 47 30	59 30	Outer limits of main pack. Field contained numerous heavy pans. Strings of light slush with occasional patches field ice extended approximately 12 miles seaward of the entire outer edge.
			to 47 00	59 00	
			46 00	59 00	
			45 25	60 00	
			45 25	60 40	
8	do	USCGC Sorrel	45 10	59 06	Floe of light field ice about 3 miles in diameter. Southwestern limit.
9	Mar. 1	Ice Patrol plane	From 52 00	53 40	Outer limits of main field.
			to 50 10	52 50	
			48 50	52 45	
			52 20	52 30	Outer limits of slush and sludge.
			49 40	51 15	
			48 20	52 40	
10	do	do	49 39	52 55	Southernmost berg.
			46 55	52 03	Southern edge of light winter ice extending south along Avalon Peninsula.
11	do	do	48 56	51 37	Outer limits all field ice off Cape Bonavista 10/10 cover near outer edge.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
			From Scatari Island to		
			44 55	59 40	
			44 55	60 35	Light to moderately heavy winter ice
			44 27	60 37	
			44 21	60 23	
			44 40	59 08	
			45 40	58 41	
			46 05	58 41	
			47 00	59 25	
			Beach at Cape Anguille		
			From edge of winter ice to		
			47 30	59 05	Light slush
			47 25	58 45	
			47 10	58 36	
			46 20	58 30	
12	Mar. 2	Ice Patrol plane	From outer edge of slush belt to		
			46 10	58 06	Patches of slush.
			to		
			45 40	59 00	
			15 miles beyond southern limit		
			Close to beach north of Scatari Island.		Field of winter ice.
			Between main field and coast south of Scatari Island to		
			44 15	60 40	
			44 08	60 50	
			44 25	61 55	Light new ice.
			thence southwestward along coast as a belt 20 to 30 miles wide to limit of visibility westward of 62° W.		
			From		
			50 40	53 20	
			to		Outer edge main field.
			49 40	53 20	
			47 50	52 10	
13	Mar. 3	do	52 00	52 50	
			51 00	52 10	
			48 35	51 10	Outer limits of slush and sludge belt.
			46 55	52 00	
			47 00	52 50	
14	do	do	48 35	52 46	Berg.
15	do	do	48 41	52 50	Do.
16	do	do	48 55	53 00	Do.
17	do	do	49 22	51 39	Do.
18	do	do	49 00	53 00	Numerous bergs and growlers in vicinity
19	do	Newfoundland	45 00	60 30	Heavy field ice.
20	do	Mont Clair	45 26	48 00	Southern limits of field ice.
21	do	do	45 27	48 15	Large berg.
			From		
			49 16	53 29	
			to		
			49 26	52 45	
			47 48	52 26	
22	Mar. 5	Ice Patrol plane	47 43	52 42	Winter ice.
			and from Motion Bay to		
			47 16	52 40	
			½ mile off Gull Island.		
23	do	do	48 50	52 45	Growlers
24	do	do	48 17	52 35	Do.
25	Mar. 6	do	Southern limits at 46°10′ N. Inner edge 2 to 6 miles offshore from Cape Race to Cape Spear Outer limits 30 to 35 miles offshore from 46°10′ N., to 47°30′ N., thence to		Winter ice.
			48 30	50 38	

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
26	Mar. 6	Ice Patrol plane	49 05	53 10	Berg.
27	do	do	48 30	52 55	Do.
28	do	do	48 25	52 55	Do.
29	do	do	48 20	52 50	Do.
30	do	do	48 15	52 48	Do.
31	do	do	48 12	52 45	Do.
32	do	do	49 20	53 25	3 Growlers.
33	do	do	49 12	53 08	Growler.
34	do	do	49 02	53 08	Do.
35	do	do	48 55	53 08	Do.
36	do	Aquitania	From Halifax, N.S., to 100-fathom curve.		Large fields of pan ice.
37	Mar. 7	Cabot Strait	From Cape Ray to 30 miles east of Scatari Island and as far west as Sable Island.		Heavy loose field ice.
38	do	do	44 40	59 15	Scattered field ice.
39	Mar. 8	Ice Patrol plane	From 46 15 to 46 10 46 25 47 30 48 07 49 10	53 30 53 10 52 10 51 25 50 12 50 25	Outer limits of field ice.
			Shore leads 3 miles wide at Cape Race to 15 miles wide at Cape Spear to 4 miles at Cape St. Francis.		Scattered slush in leads.
40	do	do	47 47	53 31	2 Bergs
41	do	do	48 05	51 45	Berg.
42	do	do	Between 48°00′ and 48°40′ and west of 52°00′		16 bergs and 18 growlers
43	do	do	47 47	52 31	Growler.
44	Mar. 9	do	From 44 20 to 44 15 44 05 46 10 47 50	64 00 61 00 59 10 58 22 59 40	Outer limit of winter ice.
			With shore lead up to 5 miles wide along coast from 44 20 to 45 20 North of Scatari Island.	64 00 60 45	Heavy field ice solid to coast.
45	do	Cape Race Radio	Cape Race		Sludge.
46	Mar. 10	Fort Amherst	43 54	60 50	Patch of field ice.
47	do	U. S. S. Noxubee	46 58	52 30	Berg.
48	do	do	46 52	52 44	Do.
49	do	do	47 21	52 30	Do.
50	do	Cape Race Radio	47 22	52 28	Large berg (same as 49).
51	do	Canadian Constructor	43 57	63 16	Large field of soft sludge.
52	do	Cape Race Radio	46 59	52 34	Berg (same as 47).
53	do	do	46 49	52 44	Small berg (same as 48).
54	do	do	47 10	52 37	Large berg.
55	Mar. 11	Ice Patrol plane	46 36	52 40	Berg.
56	do	do	46 39	52 09	Do.
57	do	do	46 45	52 48	Do.
58	do	do	46 54	52 31	Do.
59	do	do	47 24	52 37	Do.
60	do	do	47 17	52 36	Growler.
61	do	do	47 45	52 17	Do.
62	do	do	47 46	52 13	Do.
63	do	do	47 47	52 05	3 Growlers.
64	do	do	47 52	51 59	Growler.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
			From		
			48 55	51 00	
			to		
			48 35	50 53	
			48 10	51 20	
			47 55	50 50	
			47 13	51 44	Outer limits of heavy field ice.
			46 40	52 10	
			46 43	52 30	
			46 53	52 40	
			47 13	52 36	
			thence to beach at		
			47 35		Do.
			From		
65	Mar. 11	Ice Patrol plane	46 40	52 12	
			to		
			46 03	52 30	
			45 56	52 47	
			45 48	52 47	
			45 46	52 30	Outer limits of strings and patches of field ice.
			46 00	52 00	
			47 25	50 28	
			48 20	50 07	
			49 10	50 20	
			From		
			47 50	50 00	
			to		Southeastern limit of scattered light strings and patches of slush and sludge.
			47 50	49 10	
			48 30	49 25	
66	do	do	49 46	53 01	Two or three bergs.
67	Mar. 13	Cape Race Radio	46 40	52 50	Field ice with 2 bergs.
68	do	do	46 45	52 50	Berg.
69	Mar. 14	Fort Amherst	47 52	52 28	Do.
70	do	do	47 20	52 34	Do.
71	do	do	47 23	52 41	Do.
72	do	do	47 06	52 41	Do.
73	do	do	47 03	52 39	Do.
74	do	do	46 59	52 34	Do.
75	do	do	46 46	52 48	Berg (same as 68).
76	do	do	46 40	52 52	Berg (same as 1 of 67).
			From		
			46 50	54 30	
			to		Outer limits of strings and patches of slush and sludge.
			45 40	53 40	
			45 35	52 30	
			46 50	50 50	
			From		
77	do	Ice Patrol plane	48 00	49 50	
			to		
			48 20	50 40	
			48 00	50 35	Outer limits of main ice field.
			47 00	51 25	
			46 10	52 50	
			46 20	53 13	
78	do	do	46 38	52 51	Berg
79	do	do	46 46	52 46	Do.
80	do	do	47 16	52 38	Do.
81	do	do	47 21	52 23	Do.
82	do	do	47 22	52 43	Do.
83	do	do	47 28	52 22	Do.
84	do	do	46 03	52 28	Growler.
85	do	do	46 13	53 21	Do.
			From		
			47 00		
			to		
86	do	do	48 00		24 growlers in this area.
			between		
				51 50	
				and	
				52 30	
87	Mar. 15	do	47 55	52 30	2 bergs.
88	do	do	47 43	52 23	Berg.
89	do	do	47 40	51 50	2 bergs.
90	do	do	48 25	52 40	Berg.
91	do	do	48 38	52 35	Do.
92	do	do	48 35	52 30	Do.
93	do	do	48 30	52 25	Do.
94	do	do	48 38	52 20	Do.
95	do	do	48 32	51 50	Do.
96	do	do	47 30	51 40	Do.
97	do	do	49 18	52 32	Do.
98	do	do	49 38	52 32	Do.
99	do	do	49 32	52 12	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
100	Mar. 15	Ice Patrol plane	49 23	52 08	Berg.
101	do	do	49 45	51 37	Do.
102	do	do	47 48	52 02	Growler.
103	do	do	47 45	51 50	Do.
104	do	do	47 43	51 35	Do.
105	do	do	48 37	52 32	Do.
106	do	do	48 35	51 50	Do.
107	do	do	48 32	51 37	Do.
108	do	do	48 35	50 55	Do.
109	do	do	49 28	52 50	2 growlers.
110	do	do	49 32	52 25	Growler.
111	do	do	49 22	52 20	Do.
112	do	do	49 25	52 10	2 growlers.
113	do	do	From 47 40 to 47 00 47 30 49 00 49 50	 50 55 49 00 46 40 51 00 50 35	Outer limits of field ice.
114	do	Norefjord	From 45 20 to 45 17	 52 24 52 31	Field ice running from NE. to SW.
115	do	Cape Race Radio	46 40	52 40	Large berg.
116	Mar. 16	do	46 40	53 00	String of slob ice.
117	Mar. 17	Ice Patrol plane	46 30	52 40	Berg.
118	do	do	46 30	52 18	Do.
119	do	do	46 31	52 18	Growler.
120	do	do	46 27	51 45	Do.
121	do	do	From 46 10 to 46 15 46 40	 53 30 52 05 51 30	String of light sludge 1 to 3 miles wide.
122	Mar. 18	do	46 30	52 40	Berg.
123	do	do	46 30	52 18	Do.
124	do	do	46 31	52 18	Growler.
125	do	do	46 27	51 45	Do.
126	do	do	From 47 15 to 46 40 45 32 44 46 45 10 Shore leads up to 35 miles wide from last position to Scatari Island thence 12 to 20 miles wide past Cape Smoke closing to beach in vicinity of Cape Egmont.	 58 30 57 30 57 38 59 20 59 56	Outer limits of field ice. Leads.
127	Mar. 19	do	From Cape Ray to 46 20 to 45 20 44 50 45 10 46 00 46 10 Flint Island.	 57 35 57 40 59 00 59 55 58 50 59 40	Outer limits of field ice.
128	do	do	From 49 20 to 48 33 48 17 47 18 46 52 47 30 48 20 48 10 From 49 00 to 47 30 47 30 46 15 46 05 46 10	 51 30 49 20 49 18 50 21 51 38 52 23 52 00 52 45 50 00 47 45 49 30 51 25 52 30 53 23	Outer limits of heavy field ice. Outer limits of strings and patches of field ice.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
129	Mar. 19	Ice Patrol plane	46 23	51 45	Berg.
130	do	do	46 27	52 33	Do.
131	do	do	46 28	52 12	Do.
132	do	do	46 58	51 46	Do.
133	do	do	46 25	53 16	Radar target, possible berg.
134	do	do	47 26	49 47	Do.
135	do	do	From 47 20 to 48 00 between	 51 00 and 52 00	11 bergs and numerous growlers.
136	do	Cape Race Radio	12 miles SE of Cape Race		Berg and patches of slob ice running in all directions.
137	Mar. 23	Ice Patrol plane	46 20	51 30	Berg.
138	do	do	46 30	51 45	Do.
139	do	do	46 45	51 40	Do.
140	do	do	47 05	52 40	Do.
141	do	do	47 18	51 10	Do.
142	do	do	47 15	50 50	Do.
143	do	do	47 32	51 20	Do.
144	do	do	47 32	51 30	Do.
145	do	do	47 48	50 53	Do.
146	do	do	47 45	51 10	Do.
147	do	do	47 58	51 18	Do.
148	do	do	48 12	50 40	2 bergs.
149	do	do	46 12	51 25	Growler.
150	do	do	46 45	51 45	Do.
151	do	do	47 22	51 05	Do.
152	do	do	47 40	50 20	2 growlers.
153	do	do	47 52	50 10	Growler.
154	do	do	From 47 08 to 46 30 46 30 47 40 47 40 47 15 47 40	 52 20 51 30 50 30 49 50 48 00 47 15 47 10	Outer limits of field ice.
155	do	Canadian Dept. of Transport by air sighting	From Cape Ray to 46 20 45 00 to Scatari Island.	 58 30 58 30	Do.
156	Mar. 24	Ice Patrol plane	From 47 25 to 46 45 47 27 47 35 48 30	 52 28 50 00 48 10 47 25 48 30	Outer edge of main ice field.
157	do	do	47 04	47 03	Radar target, possible berg.
158	do	do	47 15	51 04	Berg.
159	do	do	47 17	51 17	Do.
160	do	do	47 23	47 45	Do.
161	do	do	47 24	47 53	Do.
162	do	do	47 36	47 45	Large berg.
163	do	do	From 47 43 to 47 18 between	 47 50 and 48 15	7 bergs in field ice.
164	do	USCGC Eastwind	From 46 45 to 48 40	 51 10 49 30	Heavy field ice.
165	do	do	48 12	49 40	2 bergs.
166	do	Ice Patrol plane	46 09	51 11	Small growler.
167	do	do	46 16	51 12	Do.
168	do	do	From 46 28 to 46 28	 51 07 51 19	Small patch of field ice.

No.	Date	Name of vessel	North latitude ° ′	West longitude ° ′	Description
169	Mar. 24	Ice Patrol plane	From 46 36 to 46 36	 50 30 50 53	Southern extremity of patch of field ice extending from N. Northern limits not observed.
170	Mar. 25	Stockholm	47 34	46 55	Berg.
171	...do...	John W. Mackay	45 15	57 15	Strings and scattered pieces of light broken ice. Heavy ice extending to N. and NW.
172	Mar. 26	...do	46 10	57 10	Scattered field running to NW.
173	...do...	True Knot	46 30	47 10	2 large growlers.
174	Mar. 27	Ice Patrol plane	46 05	46 38	Berg.
175	...do...	...do	46 10	46 15	Do.
176	...do...	...do	46 25	47 20	Do.
177	...do...	...do	46 29	47 02	Do.
178	...do...	...do	46 33	47 17	Do.
179	...do...	...do	47 01	48 18	Do.
180	...do...	...do	47 09	49 02	Do.
181	...do...	...do	47 09	49 13	Do.
182	...do...	...do	47 16	50 49	Do.
183	...do...	...do	47 17	48 52	Do.
184	...do...	...do	46 29	47 02	10 growlers.
185	...do...	...do	46 30	47 20	3 growlers.
186	...do...	...do	47 12	48 40	10 growlers.
187	...do...	...do	From 47 15 to 47 30	between 50 00 and 51 40	10 growlers.
188	...do...	City of Lucknow	45 52	46 20	Small berg.
189	...do...	Afoundria	46 26	46 30	Small bergs and several growlers.
190	...do...	North Voyageur	From 40 miles east of Funk Island to east of St. Anthony.		Slob ice occasionally heavy with large polynyas. Numerous small bergs.
191	...do...	Afoundria	46 26	46 30	Berg and numerous growlers (same as 189).
192	...do...	...do	46 18	46 45	Berg.
193	...do...	...do	46 13	46 44	Do.
194	...do...	...do	46 11	46 51	Do.
195	...do...	...do	46 06	46 56	Do.
196	...do...	Ice Patrol plane	From 46 40 to 47 40 48 10 49 00	 46 30 47 50 49 50 49 50	Outer limits of field ice.
			From 47 00 to 47 00 47 40 47 40 48 20 49 20	 46 30 47 00 47 40 48 30 50 40 50 45	Outer limits of heavy field ice.
197	...do...	...do	47 12	47 35	Berg.
198	...do...	...do	47 08	48 12	Do.
199	...do...	...do	47 12	48 25	Do.
200	...do...	...do	47 15	49 03	Do.
201	...do...	...do	47 35	49 15	Do.
202	...do...	...do	47 33	49 53	Do.
203	...do...	...do	47 38	49 50	Do.
204	...do...	...do	47 35	50 12	Do.
205	...do...	...do	47 40	50 32	Do.
206	...do...	...do	47 48	50 00	Do.
207	...do...	...do	47 58	50 55	Do.
208	...do...	...do	48 55	51 08	Do.
209	...do...	...do	48 05	51 33	Do.
210	...do...	...do	48 08	51 32	Do.
211	...do...	...do	48 13	51 15	Do.
212	...do...	...do	49 08	49 45	Do.
213	...do...	...do	49 09	50 25	Do.
214	...do...	...do	49 03	50 50	Do.
215	...do...	...do	49 10	50 50	Do.
216	...do...	...do	49 15	50 55	Do.
217	...do...	...do	47 32	49 08	Growler.
218	...do...	...do	47 38	48 08	Do.
219	...do...	...do	47 55	51 22	Do.
220	...do...	...do	48 07	51 59	Do.
221	...do...	...do	48 22	49 55	Do.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
			From				
222	Mar. 27	Ice Patrol plane	46	55	47	35	Southern edge of field ice.
			to				
			46	56	50	30	
223	Mar. 28	Afoundria	46	01	47	44	Berg and light field ice.
224	do	Goonawarra	48	12	48	41	Growler.
225	do	do	48	09	48	50	Growler and scattered pans.
226	do	do	48	07	48	56	Large growler.
227	do	do	48	06	48	58	String of sludge with growlers.
228	do	do	48	05	49	03	2 small bergs.
229	do	do	48	03	49	10	Berg and large strings of field ice with large growlers.
230	do	do	48	00	49	15	Large growlers and glacons, close packed field ice.
231	do	do	47	58	49	03	Large berg.
			From				
232	Mar. 29	do	47	32	50	27	Field ice 500 square yards in area with many large growlers.
			to				
			47	20	50	50	
233	do	do	47	12	51	10	Large berg.
234	do	do	47	00	51	35	Strings of brash.
235	do	do	48	00	49	15	Edge of ice field.
236	do	do	47	17	51	00	Do.
237	Mar. 30	Ice Patrol plane	45	16	45	23	Berg.
238	do	do	45	18	48	17	Do.
239	do	do	45	40	47	40	Do.
240	do	do	45	41	47	34	Do.
241	do	do	45	54	47	02	Do.
242	do	do	46	27	47	28	Do.
243	do	do	47	01	49	18	Do.
244	do	do	45	37	47	28	Growler.
245	do	do	45	54	47	23	Do.
246	do	do	45	55	47	16	Do.
247	do	do	46	01	47	24	Do.
248	do	do	46	30	46	32	Do.
249	do	do	46	36	47	25	Do.
250	do	do	46	37	47	13	Do.
251	do	do	46	57	49	25	Do.
252	do	do	46	58	49	19	Do.
253	do	do	47	02	50	22	Do.
254	do	do	47	03	50	07	Do.
255	do	do	47	03	50	14	Do.
256	do	do	47	04	50	20	Do.
257	do	do	47	05	50	20	Do.
			From				
			46	20			
			to				
258	do	do	46	40			Light strings and patches of field ice.
			between				
					51	50	
					and		
					52	40	
			From				
			45	35			
			to				
259	do	do	45	55			Strings and patches of slob.
			between				
					47	20	
					and		
					48	00	
260	do	Runa	47	04	45	04	Berg.
			From				
261	Mar. 31	Ice Patrol plane	46	25	50	30	Strings and patches of field ice.
			to				
			46	50	50	30	
262	do	do	46	50	51	58	Small patches of light field ice.
			From				
263	do	do	46	47	52	37	Narrow string of light field ice.
			to				
			47	00	52	27	
264	do	do	47	10	51	40	Southern extreme of field ice.
265	do	MFML (Radio Call)	46	47	49	22	5 bergs.
266	do	John W. Mackay	45	00	56	50	Strings of field ice to N. and W.
			From				
267	do	LMSD (Radio Call)	46	20	47	00	Field ice with 2 small bergs near W. end 10 miles distant.
			to				
			46	07	47	27	
268	do	Ice Patrol plane	45	17	47	57	Berg.
269	do	do	45	36	47	19	Do.
270	do	do	45	45	46	30	Do.
271	do	do	46	00	46	53	Do.
272	do	do	46	19	45	37	Do.
273	do	do	46	22	45	33	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
274	Mar. 31	Ice Patrol plane	46 26	45 08	Berg.
275	do	do	46 26	45 50	Do.
276	do	do	46 29	45 22	Do.
277	do	do	46 28	46 30	Do.
278	do	do	46 20	48 26	Do.
279	do	do	46 32	49 23	Do.
280	do	do	46 33	49 31	Do.
281	do	do	46 35	49 32	Do.
282	do	do	46 39	49 03	Do.
283	do	do	46 43	50 01	Do.
284	do	do	46 44	50 26	Do.
285	do	do	46 49	50 43	Do.
286	do	do	45 38	47 16	Growler.
287	do	do	45 39	47 20	Do.
288	do	do	45 54	46 38	Do.
289	do	do	45 58	46 48	Do.
290	do	do	45 58	46 51	Do.
291	do	do	46 00	47 01	Do.
292	do	do	46 03	47 03	Do.
293	do	do	46 27	49 13	Do.
294	do	do	46 29	49 01	Do.
295	do	do	46 31	49 39	Do.
296	do	do	46 32	49 00	Do.
297	do	do	46 32	49 41	Do.
298	do	do	46 34	49 28	Do.
299	do	do	46 36	50 08	Do.
			From		
300	do	do	45 36	47 50	Strings and patches of field ice.
			to		
			46 05	47 00	
			46 20	47 00	
			46 30	47 05	
301	do	do	46 04	47 53	Small patches of light field ice.
302	do	do	46 30	49 42	Do.
			From		
303	Apr. 1	do	47 15	47 45	Outer limits of field ice; close pack in the west, breaking down into strings in the east. Scattered strings slush and sludge within 20 miles of these limits.
			to		
			47 00	48 35	
			47 15	50 10	
			47 35	51 40	
304	do	do	46 45	49 15	3 bergs.
305	do	do	46 45	50 05	Berg.
306	do	do	46 50	49 00	2 bergs.
307	do	do	46 50	49 55	Berg.
308	do	do	47 08	48 08	Do.
309	do	do	47 08	48 48	Do.
310	do	do	47 08	48 55	Do.
311	do	do	47 05	49 50	Do.
312	do	do	47 02	50 17	Do.
313	do	do	47 10	49 12	Do.
314	do	do	47 15	47 43	Do.
315	do	do	47 18	49 00	Do.
316	do	do	47 20	49 45	Do.
317	do	do	47 23	49 08	Do.
318	do	do	47 27	49 48	Do.
319	do	do	46 53	49 22	Growler.
320	do	do	46 57	50 38	Do.
321	do	do	47 00	48 50	2 growlers.
322	do	do	47 05	49 02	Growler.
323	do	do	47 02	50 05	Do.
324	do	do	47 12	48 05	2 growlers.
325	do	do	47 25	50 12	Growler.
326	do	do	47 35	49 00	Do.
327	do	do	47 40	48 55	Do.
328	do	do	47 52	51 45	Do.
329	Apr. 2	Montclair	46 13	44 12	Radar target, possible berg.
330	do	do	45 50	45 32	Large growler.
331	do	do	45 39	46 10	Berg.
332	do	do	45 34	47 13	Large berg.
333	do	do	45 37	47 23	SE. edge of the field.
			From		
334	do	Baron Napier	46 42	47 30	Loose field ice.
			to		
			46 35	47 45	
335	do	do	46 19	47 22	3 growlers.
336	do	do	46 28	47 58	2 growlers.
337	Apr. 3	Montclair	45 26	48 00	Southern extreme of field ice.
338	do	do	45 27	48 15	Large berg.
339	do	Cape Race Radio	46 35	47 03	Heavily sealed and hummocked ice.
340	Apr. 5	Ice Patrol plane	44 18	48 50	Berg.
341	do	do	44 28	48 37	Do.
342	do	do	45 25	47 57	Do.
343	do	do	45 27	48 12	Do.

No.	Date	Name of vessel	North latitude °	′	West longitude °	′	Description
344	Apr. 5	Ice Patrol plane	45	38	46	30	Berg.
345	do	do	45	55	46	59	Do.
346	do	do	45	55	47	20	Do.
347	do	do	46	22	46	20	Do.
348	do	do	46	22	47	10	Do.
349	do	do	46	36	46	20	Do.
350	do	do	46	39	48	09	Do.
351	do	do	46	50	46	20	Do.
352	do	do	46	52	48	00	Do.
353	do	do	46	59	47	35	Do.
354	do	do	46	59	48	57	Do
355	do	do	47	13	48	08	2 bergs.
356	do	do	47	13	48	20	Berg.
357	do	do	47	20	47	15	Do.
358	do	do	47	22	47	48	Do.
359	do	do	47	25	47	00	Do.
360	do	do	47	30	48	35	Do.
361	do	do	47	32	49	05	Do.
362	do	do	47	37	47	32	2 bergs.
363	do	do	47	40	48	00	Berg.
364	do	do	47	45	49	15	Do.
365	do	do	47	45	49	30	Do.
366	do	do	47	50	48	50	Do.
367	do	do	47	56	47	36	Do.
368	do	do	47	56	48	25	Do.
369	do	do	48	00	49	00	Do.
370	do	do	48	08	51	35	Do.
371	do	do	48	32	50	52	Do.
372	do	do	45	31	47	48	Growler.
373	do	do	45	35	47	43	Do.
374	do	do	45	52	46	39	Do.
375	do	do	45	48	47	42	Do.
376	do	do	45	55	45	55	Do.
377	do	do	46	15	46	15	Do.
378	do	do	46	32	46	45	Do.
379	do	do	46	38	46	08	Do.
380	do	do	46	38	46	55	Do.
381	do	do	46	42	47	50	Do.
382	do	do	46	45	46	53	Do.
383	do	do	46	45	47	25	Do.
384	do	do	46	46	47	53	Do.
385	do	do	47	32	48	01	Do.
386	do	do	47	38	49	00	Do.
387	do	do	47	40	48	10	10 growlers.
388	do	do	47	43	48	05	Growler.
389	do	do	47	45	49	20	Do.
			From				
			48	25	51	20	
390	do	do	to				
			48	25	50	10	Outer limits of field ice.
			47	45	49	30	
			47	40	48	00	
391	do	Commercial plane	44	50	47	05	Berg.
392	do	Gander Radio	45	33	45	30	Large flat berg.
393	do	do	46	10	47	45	Small berg.
394	Apr. 6	Ice Patrol plane	45	13	44	50	Berg.
395	do	do	45	37	46	28	Do.
396	do	do	46	04	45	54	Do.
397	do	do	47	07	47	12	Do.
398	do	do	47	10	47	22	Do.
399	do	do	47	12	47	13	Do.
400	do	do	47	13	48	21	Do.
401	do	do	47	13	49	18	Do.
402	do	do	47	19	48	17	Do.
403	do	do	47	25	49	15	Do.
404	do	do	47	28	47	43	Do.
405	do	do	47	39	48	07	Do.
406	do	do	47	30	48	38	Do.
407	do	do	47	31	47	59	Do.
408	do	do	47	51	47	32	Do.
409	do	do	47	52	49	28	Do.
410	do	do	47	59	50	25	Do.
411	do	do	48	00	49	30	Do.
412	do	do	48	09	53	42	Do.
413	do	do	48	16	51	31	Do.
414	do	do	45	13	44	59	4 growlers.
415	do	do	46	59	47	02	Growler.
416	do	do	47	03	46	54	Do.
417	do	do	47	38	46	43	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
418	Apr. 6	Ice Patrol plane	From 47 00 to 48 00 between	 47 00 and 49 00	37 growlers.
419	do	do	47 55	51 38	Strings of light winter ice.
420	do	do	47 04	47 55	Do.
421	do	do	From 48 20 to 47 55 47 43 47 33	 51 08 50 45 50 00 49 00	Broken field ice but with numerous heavy pieces.
422	do	do	45 39	44 40	Radar target, possible berg.
423	do	do	47 15	46 13	Do.
424	do	do	47 22	47 18	Do.
425	do	do	47 22	48 01	Do.
426	do	do	47 23	48 33	Do.
427	do	do	47 28	47 30	Do.
428	do	do	47 29	47 24	Do.
429	do	do	47 29	48 22	Do.
430	do	do	47 30	48 54	Do.
431	do	do	47 32	46 57	Do.
432	do	do	47 32	47 27	Do.
433	do	do	47 33	49 10	Do.
434	do	do	47 33	48 39	Do.
435	do	do	47 34	48 04	Do.
436	do	do	47 35	47 29	Do.
437	do	do	47 38	48 54	Do.
438	do	do	47 43	46 40	Do.
439	do	do	47 48	47 48	Do.
440	do	do	47 53	48 08	Do.
441	do	do	47 54	48 40	Do.
442	do	do	47 55	48 55	Do.
443	do	do	From 49 40 to 49 05 48 43 48 42 48 48 49 00	 52 33 52 28 52 32 52 23 51 50 51 50	Inner limits of field ice.
			to 49 07 48 45 48 27 48 23 48 12 48 12 through 48 05	 51 30 51 27 51 05 50 42 50 43 51 13 51 12	Do.
444	do	do	47 49	47 31	Berg.
445	do	do	47 50	47 49	Do.
446	do	do	47 51	47 41	Do.
447	do	do	47 54	47 27	Do.
448	do	do	47 56	47 30	2 bergs.
449	do	do	47 57	47 57	Berg.
450	do	do	48 00	47 39	3 bergs in vicinity.
451	do	do	48 00	49 10	Large berg.
452	do	do	48 01	47 24	Berg.
453	do	do	48 01	48 46	Do.
454	do	do	48 01	51 42	Do.
455	do	do	48 02	47 36	Do.
456	do	do	48 02	47 44	Do.
457	do	do	48 03	47 46	Do.
458	do	do	48 03	49 46	Large berg.
459	do	do	48 04	48 05	Do.
460	do	do	48 04	48 08	Do.
461	do	do	48 04	48 47	Do.
462	do	do	48 05	48 52	Do.
463	do	do	48 07	49 36	Do.
464	do	do	48 07	50 58	Do.
465	do	do	48 08	52 49	Small berg aground on W. side of Baccalieu Island.
466	do	do	48 11	49 41	Small berg.
467	do	do	48 11	50 51	Berg.
468	do	do	48 13	48 06	Do.
469	do	do	48 13	49 13	Do.
470	do	do	48 16	49 00	Do.
471	do	do	48 16	49 28	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
472	Apr. 6	Ice Patrol plane	48 16	49 38	Berg.
473	----do----	----do	48 18	50 57	Do.
474	----do----	----do	48 21	48 32	Do.
475	----do----	----do	48 21	51 32	Do.
476	----do----	----do	48 23	47 40	Do.
477	----do----	----do	48 23	51 16	Do.
478	----do----	----do	48 23	52 26	Do.
479	----do----	----do	48 29	50 12	Do.
480	----do----	----do	48 32	50 48	Do.
481	----do----	----do	48 32	51 27	Berg (position doubtful).
482	----do----	----do	48 32	52 23	Berg.
483	----do----	----do	48 37	50 04	Do.
484	----do----	----do	48 37	50 07	Do.
485	----do----	----do	48 43	52 13	Do.
486	----do----	----do	48 51	51 12	Do.
487	----do----	----do	48 56	51 13	Do.
488	----do----	----do	48 58	51 15	Do.
489	----do----	----do	49 00	51 11	Do.
490	----do----	----do	49 03	50 56	Do.
491	----do----	----do	49 06	51 53	Do.
492	----do----	----do	49 13	51 22	Do.
493	----do----	----do	47 53	46 56	Growler.
494	----do----	----do	47 56	47 03	Do.
495	----do----	----do	47 59	47 21	2 growlers.
496	----do----	----do	48 05	47 32	Growler.
497	----do----	----do	48 28	48 38	Do.
498	----do----	----do	48 28	49 39	2 growlers.
499	----do----	----do	48 30	49 23	Growler.
500	----do----	----do	48 31	50 27	Do.
501	----do----	----do	48 33	49 27	Do.
502	----do----	----do	48 34	49 53	Do.
503	----do----	----do	48 37	50 10	2 growlers.
			From		
			49 30	50 52	
			to		
			49 22	50 50	Outer limits of all field ice.
			49 06	50 23	
			49 15	50 00	
			through		
			48 05	48 30	
			From		
504	----do----	----do	49 30	51 07	
			to		
			49 20	51 03	Outer edge of ice field. Between these limits and outer limits of all field ice, ice consists of widely scattered strings and patches.
			48 53	50 20	
			49 04	50 06	
			48 50	49 10	
			48 13	49 00	
			to		
			48 04	48 30	
			through		
			47 57	48 20	
505	Apr. 7	USCGC Sebago	47 03	47 50	Berg.
506	----do----	----do	46 44	47 45	Radar target, possible berg.
507	----do----	----do	47 04	47 29	Berg.
508	----do----	----do	47 01	47 30	Growler.
509	----do----	----do	47 07	47 10	Southern limit of field ice. Edge runs 070°(T) for 15 miles. Numerous bergs and growlers.
510	----do----	Hamina	48 30	49 23	Drifting ice.
511	----do----	Cairnvalona	47 11	46 50	Large berg.
512	----do----	----do	47 04	46 20	Growler.
513	----do----	----do	47 07	46 26	Do.
514	----do----	Hamina	48 25	49 35	3 large and several small bergs.
515	----do----	USCGC Sebago	46 59	48 55	Radar target, possible berg.
			From Cape Ray to		
			47 18	57 55	
516	----do----	Canadian Dept. of Transport by air sighting	to		Outer limits of field ice in Gulf of St. Lawrence.
			45 25	58 25	
			45 25	59 00	
			5 miles off Scatari Island.		
517	Apr. 8	Ice Patrol plane	44 43	48 45	Berg.
518	----do----	----do	45 20	46 35	Do.
519	----do----	----do	45 22	45 53	Do.
520	----do----	----do	45 25	47 03	Do.
521	----do----	----do	45 27	47 18	Do.
522	----do----	----do	45 28	47 25	Do.
523	----do----	----do	45 32	45 45	Do.
524	----do----	----do	45 34	48 33	Do.
525	----do----	----do	45 45	46 45	2 bergs.
526	----do----	----do	45 45	47 23	Berg.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
527	Apr. 8	Ice Patrol plane	46 06	46 30	Berg.
528	do	do	46 15	47 45	2 bergs.
529	do	do	47 12	52 22	Berg.
530	do	do	45 22	47 19	Growler.
531	do	do	46 12	47 28	Do.
532	do	Fort Amherst	45 00	57 25	Narrow string of loose field ice extending as far south as could be seen.
			From		
533	do	USCGC Sebago	47 15	46 52	Numerous strings of field ice containing bergs and growlers.
			to		
			47 32	46 15	
534	do	do	47 16	46 42	Berg.
535	do	do	47 18	46 30	Do.
536	do	do	47 21	46 36	Do.
537	do	do	47 28	46 36	Do.
538	do	do	47 34	46 35	Do.
539	do	do	47 19	46 49	Growler.
540	do	do	47 22	46 28	Do.
541	do	do	47 20	46 30	Do.
542	do	do	47 22	46 26	Do.
543	do	do	47 24	46 19	Do.
544	do	do	47 33	46 31	Do.
545	do	Carnival	46 49	47 20	Medium sized tabular berg.
546	do	Cape Race Radio	45 00	57 25	Narrow string of loose field ice extending as far south as could be seen (same as 532).
547	do	Noordam	44 18	46 10	Large berg.
548	Apr. 9	Nova Scotia	45 54	46 44	Do.
549	do	do	45 45	47 19	Radar target, possible berg.
550	do	do	45 44	48 59	Do.
			From 10 miles off Cape Ray		
			to		
551	Apr. 10	Canadian Dept. of Transport by air sighting	46 40	58 05	Outer limits of field ice in St. Lawrence area.
			45 30	58 00	
			45 30	59 00	
			Vicinity of Louisburg, N.S.		
552	Apr. 11	USCGC Spencer	46 42	47 55	Small berg.
553	do	do	46 39	47 30	Large berg and growler.
554	do	do	46 44	47 12	Medium berg.
555	do	do	46 46	46 32	Large berg.
556	do	do	46 49	46 55	Small berg.
557	do	do	46 52	47 08	Large berg.
558	do	do	46 53	46 59	2 medium bergs.
559	do	do	47 09	46 33	Large berg.
560	do	do	46 20	47 30	Small growler.
561	do	do	46 33	47 11	Medium growler.
562	do	do	46 18	47 06	2 growlers.
563	do	do	46 49	46 55	4 large growlers.
564	do	do	47 01	46 36	2 growlers.
565	do	do	47 03	46 18	Small growler.
			From 10 miles off Cape Ray		
			to		
566	do	Canadian Dept. of Transport by air sighting	46 38	58 20	Outer limits of field ice in St. Lawrence area.
			45 40	58 38	
			45 50	59 50	
			Scatari Island.		
567	Apr. 12	Ice Patrol plane	46 58	47 10	Berg.
568	do	do	46 51	47 10	Do.
569	do	do	46 54	47 12	Do.
570	do	do	46 50	47 25	Do.
571	do	do	46 55	47 15	Do.
572	do	do	46 59	47 02	Do.
573	do	do	46 53	47 13	Growler.
574	do	Katrina Luckenback	44 49	48 10	Huge berg.
			From 12 miles off Cape Ray		
			to		
575	Apr. 13	Canadian Dept. of Transport by air sighting	46 38	58 20	Outer limits of field ice in St. Lawrence area.
			45 40	58 38	
			45 40	59 50	
			Vicinity of Louisburg, N.S.		
			From		
576	do	Cape Race Radio	48 03	46 52	3 bergs.
			to		
			48 07	46 56	
577	do	do	48 00	47 10	Several growlers.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
578	Apr. 14	Ice Patrol plane	44	28	48	45	Berg.
579	do	do	44	56	48	52	Do.
580	do	do	43	48	48	54	Growler.
581	do	do	44	30	48	46	Do.
582	do	do	44	52	48	22	Do.
583	do	do	44	58	48	36	Do.
584	do	do	45	01	48	21	Do.
585	do	do	45	03	48	40	Do.
586	do	Cape Race Radio	47	44	45	54	Berg.
587	do	do	46	42	46	39	Do.
588	do	do	46	37	46	37	Do.
589	do	do	46	32	46	30	Do.
590	Apr. 15	Ice Patrol plane	45	16	48	37	Do.
591	do	do	45	23	48	32	Do.
592	do	do	45	37	47	58	Do.
593	do	do	45	37	48	23	Do.
594	do	do	45	38	48	24	Do.
595	do	do	45	41	48	12	Do.
596	do	do	45	42	48	03	Do.
597	do	do	45	43	47	42	Do.
598	do	do	45	46	47	40	Do.
599	do	do	45	47	47	18	Do.
600	do	do	45	50	47	08	Do.
601	do	do	45	54	47	05	Do.
602	do	do	45	55	47	04	Do.
603	do	do	46	00	47	08	Do.
604	do	do	46	13	46	55	Do.
605	do	do	46	25	46	46	Do.
606	do	do	46	30	46	11	Do.
607	do	do	46	37	46	37	Do.
608	do	do	46	38	46	12	Do.
609	do	do	46	39	46	20	Do.
610	do	do	46	39	47	00	Do.
611	do	do	46	41	46	45	Do.
612	do	do	46	45	46	52	Do.
613	do	do	46	45	46	58	Do.
614	do	do	46	48	46	53	3 bergs.
615	do	do	46	49	46	44	Berg.
616	do	do	46	51	46	52	Do.
617	do	do	46	55	46	52	2 bergs.
618	do	do	46	56	18	35	Berg.
619	do	do	46	58	46	55	Do.
620	do	do	47	04	46	42	Do.
621	do	do	47	06	46	56	Do.
622	do	do	47	07	46	31	Do.
623	do	do	47	07	46	44	Do.
624	do	do	47	08	46	50	Do.
625	do	do	47	09	46	26	4 bergs.
626	do	do	47	12	46	40	2 bergs.
627	do	do	47	15	46	32	Berg.
628	do	do	47	22	47	02	Do.
629	do	do	47	27	46	43	Do.
630	do	do	47	30	47	02	Do.
631	do	do	47	30	47	45	Do.
632	do	do	47	35	47	18	Do.
633	do	do	47	40	48	00	Very large berg.
634	do	do	47	46	49	27	Berg.
635	do	do	44	51	47	53	4 growlers.
636	do	do	44	54	48	11	Growler.
637	do	do	44	58	48	10	Do.
638	do	do	45	38	48	24	Do.
639	do	do	45	42	48	02	Do.
640	do	do	45	52	46	39	Do.
641	do	do	45	57	46	57	Do.
642	do	do	45	58	46	56	Do.
643	do	do	46	18	46	16	Do.
644	do	do	46	29	46	22	Do.
645	do	do	46	30	46	10	Do.
646	do	do	46	32	46	10	Do.
647	do	do	46	36	46	18	Do.
648	do	do	46	48	46	42	Do.
649	do	do	46	49	48	20	2 growlers.
650	do	do	46	51	48	30	Growler.
651	do	do	46	57	45	58	Do.
652	do	do	47	02	46	35	Do.
653	do	do	47	03	45	56	Do.
654	do	do	47	03	46	26	Do.
655	do	do	47	08	46	40	16 growlers, within 10 miles.
656	do	do	47	12	46	12	Growler.
657	do	do	47	17	47	21	Do.
658	do	do	47	18	47	15	Do.
659	do	do	47	23	47	37	Do.
660	do	do	47	25	46	41	Do.

No.	Date	Name of vessel	North latitude °	North latitude ′	West longitude °	West longitude ′	Description
661	Apr. 15	Ice Patrol plane	47	25	47	25	Growler.
662	do	do	47	28	47	32	Do.
663	do	do	From				Scattered strings of field ice.
			47	37	49	08	
			to				
			47	11	47	10	
			47	20	47	00	
			47	40	48	00	
664	do	Cape Race Radio	46	11	47	42	1 large berg and 6 small bergs in line from this position.
665	do	do	46	30	46	30	Berg.
666	do	Salacia	43	28	49	15	Growler.
667	do	Canadian Dept. of Transport by air sighting	From 10 miles off Cape Ray				Outer limits of field ice in St. Lawrence area.
			to				
			46	45	58	25	
			45	34	58	20	
			Scatari Island.				
668	do	Cape Race Radio	From				3 bergs (same as 576).
			48	03	46	52	
			to				
			48	07	46	56	
669	do	do	48	00	47	10	Several growlers (same as 577).
670	do	do	46	39	46	16	Berg and growler.
671	do	do	46	42	46	24	Do.
672	do	do	46	41	46	33	Berg and growlers.
673	do	do	46	27	46	21	Large berg.
674	Apr. 16	Fort Ticonderoga	46	18	45	34	Growler.
675	Apr. 17	HMCS St. Stephen	47	47	45	43	Small berg with growlers.
676	do	Aircraft	45	30	48	15	Large berg.
677	do	HMCS St. Stephen	48	01	45	56	Berg.
678	do	Dorelian	46	46	46	30	Berg and 2 growlers.
679	do	do	46	55	46	30	Berg.
680	do	do	46	58	46	20	Do.
681	do	Danaholm	48	20	45	00	Bergs and a few growlers.
682	do	do	48	22	44	50	Do.
683	do	do	48	30	45	05	Do.
684	do	do	48	50	44	51	Do.
685	do	do	48	00	44	52	Do.
686	do	Cape Race Radio	43	25	49	30	Growler.
687	do	Canadian Dept. of Transport by air sighting	From 15 miles off Cape Ray				Outer limits of field ice in St. Lawrence area.
			to				
			46	43	58	39	
			46	00	59	05	
			Scatari Island.				
688	Apr. 18	do	From 10 miles off Cape Ray				Do.
			to				
			47	00	58	30	
			46	20	57	50	
			45	30	58	30	
			Scatari Island.				
689	do	do	From 15 miles off Cape Ray				Do.
			to				
			47	00	58	40	
			46	18	58	11	
			46	08	59	02	
			Scatari Island.				
690	do	Graiglas	47	11	47	47	Growler.
691	do	do	47	20	47	33	Small berg.
692	do	do	47	22	47	22	Do.
693	do	do	48	07	47	22	Berg.
694	Apr. 19	Ice Patrol plane	44	23	49	00	Do.
695	do	do	44	40	48	32	Do.
696	do	do	44	40	48	53	Do.
697	do	do	44	52	48	45	Do.
698	do	do	46	03	46	53	Do.
699	do	do	46	38	47	15	Do.
700	do	do	46	38	47	30	Do.
701	do	do	46	39	46	55	Do.
702	do	do	46	41	47	03	Do.
703	do	do	46	13	47	00	Do.
704	do	do	46	45	47	32	Do.
705	do	do	46	48	46	28	Do.
706	do	do	46	48	46	49	Do.
707	do	do	46	48	46	52	Do.
708	do	do	46	50	47	00	Do.
709	do	do	46	53	46	52	Do.
710	do	do	46	53	46	56	Do.
711	do	do	46	55	46	58	Do.
712	do	do	46	56	47	02	Do.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
713	Apr. 19	Ice Patrol plane	46	56	46	54	Berg.
714	do	do	46	59	48	34	Do.
715	do	do	47	00	46	25	Do.
716	do	do	47	05	47	24	Do.
717	do	do	47	11	46	55	2 bergs.
718	do	do	47	13	46	48	Berg.
719	do	do	47	20	48	05	Do.
720	do	do	44	08	48	50	Growler.
721	do	do	44	15	49	05	2 growlers.
722	do	do	44	20	49	00	Do.
723	do	do	44	38	48	30	Growler.
724	do	do	45	12	48	40	Do.
725	do	do	45	14	48	42	Do.
726	do	do	45	16	48	33	Do.
727	do	do	45	16	48	41	Do.
728	do	do	45	18	48	30	Do.
729	do	do	45	23	48	25	Do.
730	do	do	45	58	47	01	Do.
731	do	do	46	31	47	11	Do.
732	do	do	46	32	46	48	Do.
733	do	do	46	33	47	16	Do.
734	do	do	46	36	47	29	Do.
735	do	do	46	41	47	08	Do.
736	do	do	46	42	46	58	Do.
737	do	do	46	44	47	15	Do.
738	do	do	46	45	46	53	Do.
739	do	do	46	58	46	47	Do.
740	do	do	46	50	46	18	Bergs.
741	do	do	46	54	46	43	Do.
742	do	do	46	55	46	55	Do.
743	do	do	47	18	47	12	Do.
744	do	do	47	21	46	40	Do.
745	do	do	47	24	46	24	Do.
746	do	do	47	25	47	03	Do.
747	do	do	47	37	47	05	Do.
748	do	do	47	38	47	27	Do.
749	do	do	47	39	45	42	Do.
750	do	do	47	45	48	00	Do.
751	do	do	47	47	48	08	Do.
752	do	do	47	49	47	11	Do.
753	do	do	47	49	48	09	Do.
754	do	do	47	56	48	00	Do.
755	do	do	47	59	48	15	Do.
756	do	do	47	59	49	08	Do.
757	do	do	48	00	48	36	Berg.
758	do	do	48	00	48	43	Do.
759	do	do	48	01	51	37	Do.
760	do	do	48	03	48	21	Do.
761	do	do	48	03	48	49	Do.
762	do	do	48	03	49	12	Do.
763	do	do	48	04	49	35	Do.
764	do	do	48	04	51	38	Do.
765	do	do	48	08	51	20	Do.
766	do	do	48	09	51	43	Do.
767	do	do	48	11	49	19	Do.
768	do	do	48	12	48	36	Do.
769	do	do	48	12	49	21	Do.
770	do	do	48	14	49	20	Do.
771	do	do	48	16	49	25	Do.
772	do	do	48	16	49	57	Do.
773	do	do	48	18	49	08	Do.
774	do	do	48	18	50	01	Do.
775	do	do	48	18	50	24	Do.
776	do	do	48	23	51	36	Do.
777	do	do	48	31	50	37	Do.
778	do	do	48	31	51	03	Do.
779	do	do	48	32	51	06	Do.
780	do	do	48	32	51	13	Do.
781	do	do	48	35	52	12	Do.
782	do	do	48	37	49	58	Do.
783	do	do	48	43	52	20	Do.
784	do	do	48	43	53	03	Do.
785	do	do	48	48	52	15	Do.
786	do	do	48	57	51	24	Do.
787	do	do	48	57	53	09	Do.
788	do	do	46	35	46	42	Growler.
789	do	do	46	59	47	01	Do.
790	do	do	47	02	46	56	Do.
791	do	do	47	05	47	07	Do.
792	do	do	47	07	46	54	Do.
793	do	do	47	23	46	24	Do.
794	do	do	47	34	46	32	Do.
795	do	do	47	35	46	00	Do.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
796	Apr. 19	Ice Patrol plane	47	35	47	07	Growler.
797	do	do	47	36	45	50	Do.
798	do	do	47	37	47	44	Do.
799	do	do	47	43	45	56	Do.
800	do	do	47	43	48	08	Do.
801	do	do	47	44	47	08	Do.
802	do	do	47	45	48	21	Do.
803	do	do	47	47	46	13	Do.
804	do	do	47	47	48	20	Do.
805	do	do	47	48	46	09	Do.
806	do	do	47	48	48	24	Do.
807	do	do	47	48	48	38	Do.
808	do	do	47	50	48	20	Do.
809	do	do	47	52	48	01	Do.
810	do	do	47	56	48	01	Do.
811	do	do	47	56	48	28	Do.
812	do	do	47	56	48	54	Do.
813	do	do	47	56	49	08	2 growlers.
814	do	do	47	47	48	37	Growler.
815	do	do	48	00	48	17	Do.
816	do	do	48	04	48	44	Do.
817	do	do	48	04	49	07	Do.
818	do	do	48	07	46	53	Do.
819	do	do	48	08	47	08	Do.
820	do	do	48	10	48	38	Do.
821	do	do	48	10	48	55	Do.
822	do	do	48	13	48	33	Do.
823	do	do	48	13	49	19	Do.
824	do	do	48	14	46	28	Do.
825	do	do	48	18	48	45	2 growlers.
826	do	do	48	20	47	52	Growler.
827	do	do	48	22	49	27	Do.
828	do	do	48	27	49	28	Do.
829	do	do	48	34	50	57	Do.
830	do	do	47	48	45	45	Radar target, possible berg.
831	do	do	47	51	45	45	Do.
832	do	Canadian Dept. of Transport by air sighting	From 10 miles off Cape Ray to 47 46 45 Seatari Island.	 15 20 30	 58 57 58	 30 50 30	Outer limits of field ice in St. Lawrence area.
833	do	Cape Race Radio	46	41	47	05	Berg.
834	do	do	46	35	47	05	Do.
835	do	do	46	43	47	09	2 growlers.
836	do	do	46	37	47	09	2 bergs.
837	do	do	46	35	47	13	Berg.
838	do	do	46	31	47	18	2 growlers and 2 bergs.
839	do	do	46	35	47	36	Berg.
840	do	do	46	40	47	39	Do.
841	do	do	46	33	47	44	Do.
842	do	Empire Glade	46	50	46	12	Do.
843	do	do	46	38	46	30	Do.
844	do	do	46	46	47	00	Do.
845	do	do	46	36	46	57	Do.
846	do	do	46	38	47	33	Do.
847	do	do	46	32	47	29	Do.
848	do	do	46	33	47	26	Do.
849	do	do	46	44	46	44	Do.
850	do	do	46	39	46	47	4 bergs.
851	do	do	46	37	46	35	2 bergs.
852	do	do	46	52	46	37	4 growlers.
853	do	do	46	44	46	44	2 growlers.
854	do	do	46	50	46	57	Do.
855	do	do	46	41	47	02	Growler.
856	do	Canadian Dept. of Transport by air sighting	From 10 miles off Cape Ray to 47 45 45 to Seatari Island Scattered strings From 46 to 45	 00 55 50 54 45	 58 58 59 58 58	 50 28 50 19 12	Outer limits of field ice in St. Lawrence area.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
857	Apr. 19	Rutenfjell	49 01	49 25	Berg.
858	do	do	48 53	49 42	Large berg.
859	do	do	48 25	51 10	4 bergs.
860	do	do	48 00	51 37	2 large bergs with growlers.
861	do	do	46 55	46 31	Berg.
862	do	Cape Race Radio	Track E from 46 53 to 46 45	46 18 to 47 00	14 large bergs, 2 small bergs and 2 growlers in 6-mile radius of track.
863	do	do	46 41	47 05	Berg (same as 833).
864	do	do	46 35	47 05	Berg (same as 834).
865	do	do	46 43	47 09	2 growlers (same as 835).
866	do	do	46 36	47 09	2 bergs (same as 836).
867	do	do	46 35	47 13	Berg (same as 837).
868	do	do	46 31	47 18	2 bergs, 2 growlers (same as 838).
869	do	do	46 35	47 36	Berg (same as 839).
870	do	do	46 40	47 39	Berg (same as 840).
871	do	do	46 33	47 41	Berg (same as 841).
872	Apr. 20	Ice Patrol plane	47 26	45 18	Berg.
873	do	do	47 39	45 10	Do.
874	do	do	47 43	45 41	Do.
875	do	do	47 51	45 47	Do.
876	do	do	48 04	49 48	Do.
877	do	do	48 08	45 20	Do.
878	do	do	48 10	48 43	Do.
879	do	do	48 10	49 11	Do.
880	do	do	48 10	49 41	Do.
881	do	do	48 10	51 44	Do.
882	do	do	48 21	48 58	Do.
883	do	do	48 24	49 21	Do.
884	do	do	48 25	50 23	Do.
885	do	do	48 26	51 40	Do.
886	do	do	48 28	48 59	Do.
887	do	do	48 28	50 59	Do.
888	do	do	48 29	50 48	Do.
889	do	do	48 30	49 30	Do.
890	do	do	48 31	50 52	Do.
891	do	do	48 32	52 08	Do.
892	do	do	48 42	50 43	Do.
893	do	do	48 42	52 57	Do.
894	do	do	48 53	50 56	Do.
895	do	do	48 44	52 04	Do.
896	do	do	48 47	50 50	Do.
897	do	do	48 47	52 41	Do.
898	do	do	48 48	50 26	Do.
899	do	do	48 48	52 07	Do.
900	do	do	48 50	50 55	Do.
901	do	do	48 51	49 39	Do.
902	do	do	48 52	52 09	Do.
903	do	do	48 54	49 23	Do.
904	do	do	48 56	49 28	Do.
905	do	do	48 58	50 57	Do.
906	do	do	49 01	52 21	Do.
907	do	do	49 02	52 33	Do.
908	do	do	49 06	50 48	Do.
909	do	do	49 09	50 11	Do.
910	do	do	49 10	52 38	Do.
911	do	do	49 22	50 38	Do.
912	do	do	49 22	51 10	Do.
913	do	do	49 30	51 07	Do.
914	do	do	49 30	51 13	Do.
915	do	do	49 32	50 14	Do.
916	do	do	49 32	50 28	Do.
917	do	do	49 32	51 32	Do.
918	do	do	49 34	50 12	Do.
919	do	do	49 35	50 58	Do.
920	do	do	49 36	50 42	Do.
921	do	do	49 44	51 08	Do.
922	do	do	49 53	50 56	Do.
923	do	do	47 47	45 21	Growler.
924	do	do	47 59	46 10	Do.
925	do	do	48 01	46 31	Do.
926	do	do	48 03	46 43	Do.
927	do	do	48 15	48 19	Do.
928	do	do	48 19	48 47	Do.
929	do	do	48 23	48 09	Do.
930	do	do	48 26	47 02	Do.
931	do	do	48 27	49 17	Do.
932	do	do	48 29	49 42	Do.
933	do	do	48 31	48 20	Do.
934	do	do	48 32	50 25	Do.
935	do	do	48 33	48 58	Do.
936	do	do	48 35	49 26	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
937	Apr. 20	Ice Patrol plane	48 37	48 40	Growler.
938	do	do	48 43	50 38	Do.
939	do	do	49 03	49 23	Do.
940	do	do	49 04	49 47	4 growlers.
941	do	do	49 13	49 58	Growler.
942	do	do	49 28	49 48	Do.
943	do	do	49 43	49 33	Do.
944	do	do	49 50	50 20	Do.
945	do	do	From 50 00	51 25	Southeastern limits of field ice. Scattered strings with 5/10 cover.
			to 49 33	51 33	
			49 15	52 10	
			Thence westward out of sight.		
946	do	Randefjord	44 11	48 48	Berg.
947	do	do	44 15	48 31	Do.
948	do	do	44 24	48 31	Do.
949	do	Canadian Dept. of Transport by air sighting	From 47 05	58 27	Outer limits of field ice in St. Lawrence area.
			to 46 00	58 25	
			45 50	59 46	
			Seatari Island.		
950	Apr. 21	Fort Highfield	46 02	47 37	Flat topped berg.
951	do	do	46 05	47 00	Berg.
952	do	Fort Erie	45 23	46 51	3 growlers.
953	do	Manchester Division	From 47 30	59 19	Area of sludge and scattered heavy pieces of ice.
			to 47 36	59 25	
954	do	August Belmont	43 30	48 31	2 small bergs.
955	do	Laurentia	45 14	47 35	Growler.
956	do	do	45 15	47 41	Small berg.
957	do	do	45 18	48 06	Berg.
958	do	Fort Highfield	From 46 15	47 00	20 bergs and 9 growlers.
			to 46 40	45 30	
959	do	Cape Race Radio	48 17	51 04	Large berg.
960	do	do	48 49	48 40	Small berg.
961	do	do	48 57	48 28	Do.
962	Apr. 22	Eucadia	46 41	48 03	Berg.
963	do	do	47 11	47 10	Do.
964	do	do	47 15	46 59	Do.
965	do	do	47 15	47 14	Do.
966	do	do	47 18	47 14	Do.
967	do	do	47 20	47 19	2 small bergs.
968	do	do	47 21	47 07	Berg.
969	do	Ice Patrol plane	44 08	48 28	Do.
970	do	do	44 50	48 22	Do.
971	do	do	45 12	47 57	Do.
972	do	do	45 22	47 53	Do.
973	do	do	45 28	47 46	Do.
974	do	do	45 33	48 17	Do.
975	do	do	45 35	47 41	Do.
976	do	do	45 57	46 24	Do.
977	do	do	46 03	46 36	Do.
978	do	do	46 08	46 18	Do.
979	do	do	46 08	46 36	Do.
980	do	do	46 13	47 04	Do.
981	do	do	46 18	47 19	Do.
982	do	do	46 22	46 15	Do.
983	do	do	46 22	47 05	Do.
984	do	do	46 23	46 25	Do.
985	do	do	46 25	46 45	Do.
986	do	do	46 32	47 16	Do.
987	do	do	46 38	48 19	Do.
988	do	do	46 41	47 02	Do.
989	do	do	46 41	47 22	Do.
990	do	do	46 43	47 13	Do.
991	do	do	46 43	47 40	Do.
992	do	do	46 44	46 51	Do.
993	do	do	46 45	46 50	Do.
994	do	do	46 46	46 55	Do.
995	do	do	46 46	47 08	Do.
996	do	do	46 48	47 09	Do.
997	do	do	46 48	47 45	Do.
998	do	do	46 48	47 56	Do.
999	do	do	46 51	47 01	Do.
1000	do	do	46 52	46 58	Do.
1001	do	do	47 05	48 00	Berg (approximate position).
1002	do	do	47 32	51 46	Berg.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
1003	Apr. 23	Ice Patrol plane	47	37	49	03	Berg (approximate position)
1004	do	do	47	48	50	22	Do.
1005	do	do	47	51	49	38	Do.
1006	do	do	47	58	50	21	Berg.
1007	do	do	48	03	50	34	Do.
1008	do	do	48	10	50	57	Do.
1009	do	do	48	12	50	58	Berg (approximate position).
1010	do	do	48	13	51	02	Do.
1011	do	do	48	13	50	21	Do.
1012	do	do	48	14	50	37	Berg.
1013	do	do	48	16	50	00	Berg (approximate position).
1014	do	do	48	31	51	10	Do.
1015	do	do	43	08	48	59	Growler.
1016	do	do	43	35	48	42	Do.
1017	do	do	44	07	48	27	Do.
1018	do	do	44	11	48	38	Do.
1019	do	do	44	53	48	21	Do.
1020	do	do	44	56	48	17	Do.
1021	do	do	45	47	46	31	Do.
1022	do	do	45	53	46	30	Do.
1023	do	do	46	00	46	30	Do.
1024	do	do	46	12	46	16	4 growlers.
1025	do	do	46	25	46	32	Growler.
1026	do	do	46	32	46	50	Do.
1027	do	do	48	05	50	51	Do.
1028	do	do	45	57	46	20	Berg.
1029	do	do	45	59	46	02	Do.
1030	do	do	46	08	46	05	Do.
1031	do	do	46	09	45	23	Do.
1032	do	do	46	10	45	52	Do.
1033	do	do	46	16	45	00	Do.
1034	do	do	46	16	45	58	Do.
1035	do	do	46	18	46	10	Do.
1036	do	do	46	24	46	01	Do.
1037	do	do	46	32	45	40	Do.
1038	do	do	46	43	45	35	Do.
1039	do	do	46	45	47	05	Do.
1040	do	do	46	47	45	42	Do.
1041	do	do	46	53	45	20	Do.
1042	do	do	46	55	47	01	Do.
1043	do	do	46	56	45	10	Do.
1044	do	do	46	56	47	10	Do.
1045	do	do	46	56	47	36	Do.
1046	do	do	46	58	47	22	Do.
1047	do	do	47	01	46	58	Do.
1048	do	do	47	03	46	15	Do.
1049	do	do	47	11	48	03	Do.
1050	do	do	47	15	47	20	Do.
1051	do	do	47	20	46	51	Do.
1052	do	do	47	20	47	32	Do.
1053	do	do	47	22	46	15	Do.
1054	do	do	47	28	46	52	Do.
1055	do	do	47	28	47	28	Do.
1056	do	do	47	33	47	30	Do.
1057	do	do	47	35	44	30	Do.
1058	do	do	47	44	48	46	Do.
1059	do	do	47	46	47	10	Do.
1060	do	do	47	46	48	23	Do.
1061	do	do	47	52	47	19	Do.
1062	do	do	47	56	49	36	Do.
1063	do	do	47	57	49	21	Do.
1064	do	do	48	01	47	20	Do.
1065	do	do	48	01	47	58	Do.
1066	do	do	48	03	47	10	Do.
1067	do	do	48	08	48	04	Do.
1068	do	do	48	08	49	46	Do.
1069	do	do	48	09	50	44	Do.
1070	do	do	48	10	50	51	Do.
1071	do	do	48	15	48	10	Do.
1072	do	do	48	15	49	42	Do.
1073	do	do	48	18	49	25	Do.
1074	do	do	48	19	49	51	Do.
1075	do	do	48	21	48	25	Do.
1076	do	do	48	22	52	48	Do.
1077	do	do	48	23	49	30	Do.
1078	do	do	48	27	48	03	Do.
1079	do	do	48	27	50	01	Do.
1080	do	do	48	27	51	32	Do.
1081	do	do	48	30	51	56	Do.
1082	do	do	48	31	50	18	Do.
1083	do	do	48	31	52	09	Do.
1084	do	do	48	31	52	23	Do.
1085	do	do	48	33	52	06	Do.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
1086	Apr. 23	Ice Patrol plane	48	33	52	18	Berg.
1087	do	do	48	36	50	00	Do.
1088	do	do	48	36	51	50	Do.
1089	do	do	48	37	52	00	Do.
1090	do	do	48	37	52	16	Do.
1091	do	do	48	39	49	38	Do.
1092	do	do	48	39	52	28	Do.
1093	do	do	48	40	51	21	Do.
1094	do	do	48	40	52	01	Do.
1095	do	do	48	42	51	44	Do.
1096	do	do	48	43	49	45	Do.
1097	do	do	48	43	50	56	Do.
1098	do	do	48	44	51	31	Do.
1099	do	do	48	44	52	01	Do.
1100	do	do	48	44	52	41	Do.
1101	do	do	48	45	51	45	Do.
1102	do	do	48	46	52	32	Do.
1103	do	do	48	47	52	35	Do.
1104	do	do	48	46	49	22	Do.
1105	do	do	48	49	51	40	Do.
1106	do	do	48	49	52	19	Do.
1107	do	do	48	49	52	25	Do.
1108	do	do	48	50	52	30	Do.
1109	do	do	48	52	50	55	Do.
1110	do	do	48	52	51	04	Do.
1111	do	do	48	52	52	09	Do.
1112	do	do	48	52	52	59	Do.
1113	do	do	48	55	50	10	Do.
1114	do	do	48	55	51	55	Do.
1115	do	do	48	55	52	02	Do.
1116	do	do	48	56	49	44	Do.
1117	do	do	48	56	50	12	Do.
1118	do	do	48	56	52	35	Do.
1119	do	do	48	57	50	17	Do.
1120	do	do	48	57	52	52	Do.
1121	do	do	48	58	51	57	Do.
1122	do	do	48	59	52	31	Do.
1123	do	do	49	00	50	07	Do.
1124	do	do	49	01	52	02	Do.
1125	do	do	49	03	50	35	Do.
1126	do	do	49	03	52	26	Do.
1127	do	do	49	03	53	02	Do.
1128	do	do	49	04	50	36	Do.
1129	do	do	49	04	51	29	Do.
1130	do	do	49	04	51	35	Do.
1131	do	do	49	04	51	46	Do.
1132	do	do	49	05	52	03	Do.
1133	do	do	49	05	52	14	Do.
1134	do	do	49	06	50	55	Do.
1135	do	do	49	06	52	06	Do.
1136	do	do	49	06	52	20	Do.
1137	do	do	49	07	52	21	Do.
1138	do	do	49	08	49	55	Do.
1139	do	do	49	08	52	08	Do.
1140	do	do	49	08	53	11	Do.
1141	do	do	49	10	51	31	Do.
1142	do	do	49	10	51	40	Do.
1143	do	do	49	10	53	18	Do.
1144	do	do	49	11	48	34	Do.
1145	do	do	49	11	52	00	Do.
1146	do	do	49	11	52	32	Do.
1147	do	do	49	13	50	06	Do.
1148	do	do	49	13	50	22	Do.
1149	do	do	49	13	51	04	Do.
1150	do	do	49	13	51	35	Do.
1151	do	do	49	13	51	58	Do.
1152	do	do	49	13	52	07	Do.
1153	do	do	49	13	52	42	Do.
1154	do	do	49	15	52	12	Do.
1155	do	do	49	16	51	38	Do.
1156	do	do	49	18	51	50	2 bergs.
1157	do	do	49	19	51	41	Berg.
1158	do	do	49	20	48	50	Do.
1159	do	do	49	20	51	00	Do.
1160	do	do	49	20	51	08	Do.
1161	do	do	49	20	52	00	Do.
1162	do	do	49	22	50	41	Do.
1163	do	do	49	22	51	32	Do.
1164	do	do	49	22	52	30	Do.
1165	do	do	49	23	50	45	Do.
1166	do	do	49	23	51	46	Do.
1167	do	do	49	23	52	15	Do.
1168	do	do	49	24	50	30	Do.

No.	Date	Name of vessel	North latitude °	North latitude ′	West longitude °	West longitude ′	Description
1169	Apr. 23	Ice Patrol plane	49	24	51	40	Berg.
1170	do	do	49	24	52	05	2 bergs.
1171	do	do	49	26	51	04	Berg.
1172	do	do	49	27	50	22	Do.
1173	do	do	49	28	51	25	Do.
1174	do	do	From 48	50	51	15	String of sludge with scattered patches to North.
			to 48	50	52	30	
1175	do	do	From 49	25	52	20	Edge of main field of ice.
			to 49	05	52	42	
			49	15	53	25	
1176	do	do	46	07	45	30	Growler.
1177	do	do	16	10	45	45	2 growlers.
1178	do	do	46	15	45	54	Growler.
1179	do	do	46	21	45	09	Do.
1180	do	do	46	28	45	38	Do.
1181	do	do	46	57	46	58	Do.
1182	do	do	46	59	46	50	Do.
1183	do	do	47	07	46	42	Do.
1184	do	do	47	24	46	46	Do.
1185	do	do	47	28	45	45	Do.
1186	do	do	47	35	47	22	Do.
1187	do	do	47	40	45	17	Do.
1188	do	do	47	42	47	35	Do.
1189	do	do	47	44	45	20	Do.
1190	do	do	48	26	49	32	Do.
1191	do	do	48	35	48	16	Do.
1192	do	do	48	40	52	52	Do.
1193	do	do	48	42	49	48	Do.
1194	do	do	48	47	52	20	Do.
1195	do	do	48	58	51	02	Do.
1196	do	do	49	05	51	52	Do.
1197	do	do	49	10	50	20	Do.
1198	do	do	49	16	52	11	Do.
1199	do	Nova Scotia	47	53	51	39	Large berg 210 feet high.
1200	do	Clan Mackenzie	44	04	48	36	Berg.
1201	do	do	14	08	48	42	2 growlers.
1202	do	Beaverdell	47	18	44	43	Berg.
1203	do	do	47	06	45	23	Do.
1204	do	do	46	58	46	23	Large berg.
1205	do	do	46	35	48	20	Do.
1206	do	Nova Scotia	48	10	50	48	Berg.
1207	do	do	48	08	50	57	Growler.
1208	do	do	48	18	50	17	Berg.
1209	do	do	48	18	50	52	2 small bergs.
1210	do	do	48	20	50	25	Berg.
1211	do	do	48	28	50	00	Small berg.
1212	do	do	48	37	49	59	Large berg.
1213	do	Pacific Ocean	45	42	58	12	Loose ice strings 300 yards wide.
1214	do	Manchester City	46	32	48	10	Berg.
1215	do	do	46	45	47	56	Do.
1216	do	do	46	49	47	37	Do.
1217	do	do	46	49	47	46	Do.
1218	do	do	47	03	47	14	Do.
1219	do	do	47	06	47	08	Do.
1220	do	do	47	23	46	37	Growler.
1221	do	do	47	34	46	57	Do.
1222	do	do	47	48	45	41	Do.
1223	do	Lyngenfjord	47	58	50	19	Large berg.
1224	do	do	48	16	50	24	Do.
1225	do	Nova Scotia	48	33	49	42	Berg.
1226	do	do	48	43	49	35	Berg and growler.
1227	do	do	48	48	49	18	Berg.
1228	do	Cape Race Radio	47	41	51	56	Do.
1229	do	Lyngenfjord	48	00	49	36	Large berg.
1230	do	do	48	18	49	22	Do.
1231	do	do	48	22	49	41	Do.
1232	do	do	48	22	49	29	Do.
1233	do	do	48	24	49	18	Growler.
1234	do	do	18	26	49	10	Small berg.
1235	do	do	48	29	49	04	Do.
1236	do	do	48	34	48	57	Do.
1237	do	do	18	37	49	04	Growler.
1238	do	Canadian Dept. of Transport by air sighting	From 47	20	59	00	Outer limits of field ice in St. Lawrence area.
			to 46	41	58	25	
			45	49	58	27	

No.	Date	Name of vessel	North latitude °	′	West longitude °	′	Description
1239	Apr. 24	Nordfarer	46	20	45	08	Berg.
1240	---do---	Cydonia	46	04	45	45	Do.
1241	---do---	---do---	46	10	44	40	Do.
1242	---do---	Kent County	45	58	45	33	Do.
1243	---do---	---do---	46	10	44	50	Do.
1244	---do---	Unknown	42	47	49	07	2 growlers.
1245	---do---	Cape Race Radio	46	02	45	08	Berg.
1246	---do---	---do---	47	18	51	23	Do.
1247	---do---	---do---	47	18	51	32	Do.
1248	Apr. 25	Mendota (IP)	From 45	29	59	02	Southern limits of field ice.
			to 45	38	58	50	
			45	39	58	50	
1249	---do---	Caxton	48	07	50	56	Small berg.
1250	---do---	---do---	48	08	50	34	Berg.
1251	---do---	---do---	48	09	50	17	Do.
1252	---do---	---do---	48	10	49	49	Do.
1253	---do---	---do---	48	12	49	51	Do.
1254	---do---	---do---	48	10	50	54	2 bergs.
1255	---do---	---do---	48	14	50	09	Large berg.
1256	---do---	---do---	48	14	50	40	Berg.
1257	---do---	Caxton	48	15	50	25	Small berg.
1258	---do---	---do---	48	20	50	13	Growler.
1259	---do---	---do---	48	20	49	55	Do.
1260	---do---	---do---	48	20	49	50	Berg.
1261	---do---	---do---	48	22	50	25	3 growlers.
1262	---do---	---do---	48	23	49	49	Growler.
1263	---do---	---do---	48	23	49	51	Do.
1264	---do---	---do---	48	28	50	14	Berg.
1265	---do---	---do---	48	31	49	43	Growler.
1266	---do---	---do---	48	38	49	35	Berg.
1267	---do---	---do---	48	39	49	08	Growler.
1268	---do---	---do---	48	52	48	30	Berg.
1269	Apr. 26	Beaconsfield	46	03	48	25	Large berg.
1270	---do---	---do---	45	53	48	00	1 large berg and 1 medium berg.
1271	---do---	Beaver Brae	46	31	48	25	Large berg.
1272	---do---	---do---	46	11	47	39	Radar contact, possible berg.
1273	---do---	---do---	46	46	47	16	Do.
1274	---do---	---do---	46	56	46	58	Do.
1275	---do---	---do---	46	57	46	32	Do.
1276	---do---	Empress of Canada	47	44	48	49	Do.
1277	---do---	---do---	47	14	49	27	Berg.
1278	---do---	---do---	47	46	49	03	Radar contact, possible berg.
1279	---do---	---do---	47	47	48	41	Do.
1280	---do---	---do---	47	50	48	51	Do.
1281	---do---	---do---	47	56	48	31	Berg.
1282	---do---	Cape Race Radio	48	19	51	04	Large berg.
1283	---do---	---do---	48	49	48	40	Small berg.
1284	---do---	---do---	48	57	48	28	Do.
1285	Apr. 27	Ice Patrol plane	43	22	48	51	Radar target, possible berg and growler.
1286	---do---	---do---	44	48	48	43	Radar contact, possible berg.
1287	---do---	---do---	45	07	48	30	Do.
1288	---do---	---do---	45	09	48	46	Do.
1289	---do---	---do---	45	12	48	03	Do.
1290	---do---	---do---	45	27	48	07	Do.
1291	---do---	---do---	45	30	48	16	Do.
1292	---do---	---do---	45	40	47	27	Growler.
1293	---do---	---do---	45	43	48	48	Radar target, possible berg.
1294	---do---	---do---	45	51	47	58	Do.
1295	---do---	---do---	45	59	48	38	Do.
1296	---do---	---do---	46	03	48	00	3 small bergs.
1297	---do---	USCGC Bibb	46	04	49	00	2 stationary radar targets in vicinity, possible bergs.
1298	---do---	---do---	46	08	47	08	Berg.
1299	---do---	---do---	46	19	47	02	Do.
1300	---do---	---do---	46	18	47	16	Do.
1301	---do---	---do---	46	19	47	08	Do.
1302	---do---	---do---	46	19	47	29	Do.
1303	---do---	---do---	46	19	47	36	Do.
1304	---do---	---do---	46	21	46	38	Do.
1305	---do---	---do---	46	21	47	06	Do.
1306	---do---	---do---	46	22	48	34	Do.
1307	---do---	---do---	46	23	46	30	Do.
1308	---do---	---do---	46	23	47	50	Do.
1309	---do---	---do---	46	24	47	56	Do.
1310	---do---	---do---	46	26	47	23	Do.
1311	---do---	---do---	46	27	47	45	Do.
1312	---do---	---do---	46	32	48	43	Do.
1313	---do---	---do---	46	31	47	17	Do.
1314	---do---	---do---	46	36	47	31	Do.
1315	---do---	Newfoundland	48	19	51	04	Large berg (same as 1282).
1316	---do---	---do---	48	49	48	40	Large berg (same as 1283).

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
1317	Apr. 27	Newfoundland	48	57	48	28	Small berg (same as 1284).
1318	do	do	46	08	49	01	Radar target, possible berg.
1319	do	LCUS (Radio call sign)	45	50	46	30	A small berg and 4 growlers.
1320	do	do	45	50	46	35	Berg.
1321	do	do	46	00	45	45	Growlers.
1322	do	do	46	05	45	35	Berg.
1323	do	Beaconsfield	45	53	48	00	1 large and 1 medium berg.
1324	do	do	46	03	48	25	Large berg.
1325	do	Beaverlake	46	29	48	38	Berg and growlers.
1326	do	do	46	44	48	08	Small berg.
1327	do	do	46	47	48	03	Large berg and growlers.
1328	do	Cairnvala	47	22	48	04	Large berg.
1329	do	Beaconsfield	48	03	48	25	Do.
1330	do	Medota (IP)	46	42	48	30	Berg.
1331	do	Daghestan	45	10	59	25	String of ice.
1332	do	Idefjord	46	20	45	25	Berg.
1333	Apr. 28	Artistidis	45	01	49	30	Do.
1334	do	Newfoundland	47	25	52	32	Do.
1335	do	Grigorios	44	58	49	02	Large berg.
1336	do	do	44	50	49	02	Berg.
1337	do	Beaverford	47	24	44	57	Do.
1338	do	Newfoundland	46	44	52	58	Low berg.
1339	do	Artistidis	45	10	48	46	Growler and string of field ice.
1340	Apr. 29	USCGC Dexter	47	36	49	07	Berg.
1341	do	Whiteshell	45	55	49	20	Large berg.
1342	do	Beaverford	46	58	48	34	Berg.
1343	do	do	46	31	48	05	Do.
1344	do	do	46	37	48	44	Do.
1345	do	do	46	23	49	00	Do.
1346	do	Manchester Regiment	47	11	47	24	Small berg.
1347	do	do	46	24	48	54	12 bergs in 7 mile radius.
1348	do	Hemsefjell	48	06	47	48	Berg and growlers.
1349	do	Ice Patrol plane	43	03	50	18	Berg.
1350	do	do	43	27	49	32	Do.
1351	do	do	43	35	49	17	Do.
1352	do	do	43	37	49	10	Do.
1353	do	do	47	25	52	37	Do.
1354	Apr. 30	Chiswick	47	45	49	02	Berg and 4 growlers.
1355	do	do	48	05	47	48	Several growlers.
1356	do	Mendota (IP)	43	03	50	19	Tabular berg.
1357	do	Canadian Dept. of Transport by air sighting	--	--	--	--	All ports in western Gulf of St. Lawrence now clear for navigation. Only ice obstructing navigation is loose ice along west coast of Cape Breton. Close packed field ice along northeast coast to limits from 10 miles off Cape North to 46° 34′ N., 59° 44′ W., to Cape Percy.
1358	May 1	AF 9135	46	05	47	40	Berg and few small bergs.
1359	do	Voltunus	47	56	51	10	Berg.
1360	May 2	USCGC Sebago	47	59	49	13	Radar target, possible berg.
1361	do	do	47	53	49	07	Do.
1362	do	do	47	51	49	17	Do.
1363	do	do	48	13	49	00	Do.
1364	do	do	48	16	49	02	Do.
1365	do	do	48	05	49	04	Do.
1366	do	Marengo	46	14	47	55	Large berg.
1367	do	Fort Musquarro	46	26	48	24	Berg.
1368	do	Cape Race Radio	46	54	48	56	Do.
1369	do	Voltunus	47	55	49	15	2 bergs.
1370	do	do	48	02	49	08	Berg.
1371	do	Moveria	47	05	48	04	Do.
1372	do	do	46	57	47	57	Do.
1373	do	do	46	56	47	57	Growler.
1374	do	do	46	54	47	56	Do.
1375	do	Fort Erie	43	14	50	23	Large berg.
1376	do	Port St. Johns	43	52	48	28	Berg.
1377	do	FOVH (call)	45	03	49	12	Berg and 3 growlers.
1378	do	Blekinge	45	30	47	47	Berg.
1379	do	do	45	45	47	52	Do.
1380	do	do	45	44	47	46	Do.
1381	do	Maritmaersk	44	01	48	35	Growler.
1382	do	Moveria	46	49	48	52	8 bergs.
1383	do	do	46	52	48	57	Berg.
1384	do	do	46	35	48	20	Do.
1385	do	do	46	38	48	40	5 growlers.
1386	do	Consuelo	47	30	47	24	Medium berg.
1387	do	do	46	40	48	45	Berg and growler.
1388	do	do	47	02	48	09	Large berg.
1389	do	Port St. John	43	48	49	18	Growler.
1390	do	Ice Patrol plane	45	15	49	08	Berg.
1391	do	do	45	15	49	17	Berg and growlers.
1392	do	do	45	20	48	58	Berg.
1393	do	do	45	21	48	11	Do.

No.	Date	Name of vessel	North latitude ° ′	West longitude ° ′	Description
1394	May 2	Ice Patrol plane	45 30	47 51	Berg.
1395	do	do	45 38	47 51	Do.
1396	do	do	45 38	48 51	Do.
1397	do	do	45 43	48 05	Do.
1398	do	do	45 47	49 10	Do.
1399	do	do	45 50	48 00	Do.
1400	do	do	46 07	47 43	Do.
1401	do	Mendota (IP)	43 36	49 22	Do.
1402	do	Unknown	47 02	48 45	Do.
1403	do	Blairdevon	48 15	47 10	Growler.
1404	do	do	48 13	47 30	1 berg and 2 growlers.
1405	May 3	GLJV (call)	47 24	44 50	Large berg.
1406	do	Consuelo	46 31	49 01	Berg.
1407	do	GLJV (call)	47 08	46 00	Do.
1408	do	Joas Corte	43 26	50 15	Do.
1409	do	Tabinta	47 25	44 45	Do.
1410	do	Mendota (IP)	43 35	49 13	Berg (same as on second above).
1411	do	do	43 51	49 13	Growler.
1412	do	do	44 06	49 16	Do.
1413	do	Canadian Dept. of Transport by air sighting	Outer limits St. Lawrence ice field from 5 miles off Cape North to 46.50° N., 59. 30° W., to 46.25° N., 58.40° W.		
1414	May 4	Tabinta	46 48	46 29	Radar target, possible berg.
1415	do	do	46 46	46 30	Do.
1416	do	Padua	43 35	50 15	Berg.
1417	do	do	43 33	50 10	Do.
1418	do	Tabinta	46 19	47 43	Radar target, possible berg.
1419	do	do	46 27	48 01	Do.
1420	do	do	45 58	48 43	Berg.
1421	do	Baron Tweedmouth	47 06	47 48	Do.
1422	do	do	47 12	47 53	Do.
1423	do	do	46 51	47 41	Do.
1424	do	do	47 06	48 11	Do.
1425	do	do	47 04	47 55	Do.
1426	do	Empress of Canada	46 42	52 59	Do.
1427	do	do	48 35	48 35	Do.
1428	do	do	48 35	48 04	Do.
1429	do	do	48 50	47 44	Growler.
1430	do	do	48 19	49 31	Radar target, possible berg.
1431	do	do	48 20	49 27	Do.
1432	do	Daghestan	46 06	48 40	1 berg and 7 growlers.
1433	do	do	46 08	48 19	1 berg and 20 growlers.
1434	do	do	46 06	47 52	Berg.
1435	do	Baron Tweedmouth	46 43	48 15	Do.
1436	do	do	46 41	48 28	Do.
1437	do	Ice Patrol plane	45 23	48 55	Do.
1438	do	do	45 24	48 22	Do.
1439	do	do	46 22	47 29	Do.
1440	do	do	46 46	46 18	Do.
1441	do	do	46 57	46 30	Do.
1442	do	Mendota (IP)	43 52	48 28	Do.
1443	do	Ice Patrol plane	45 30 between 47 30	46 00 49 00	Radar targets, possible bergs.
1444	do	Hants County	48 15	49 33	Large berg.
1445	do	do	48 22	49 07	Berg.
1446	do	do	48 26	49 01	Berg and growler.
1447	do	do	48 26	48 16	Berg.
1448	May 5	Ice Patrol plane	45 00	48 01	Do.
1449	do	do	45 08	47 56	Do.
1450	do	do	45 22	48 11	Do.
1451	do	do	45 27	47 47	Do.
1452	do	do	45 30	48 19	Do.
1453	do	do	45 30	48 28	Do.
1454	do	do	45 42	48 40	Do.
1455	do	do	45 49	45 49	Do.
1456	do	do	45 59	47 58	Do.
1457	do	do	46 04	46 50	Do.
1458	do	do	46 10	47 35	Very large berg.
1459	do	do	46 10	48 16	Berg.
1460	do	do	46 45	47 15	Do.
1461	do	do	46 52	46 47	Do.
1462	do	do	47 03	46 09	Do.
1463	do	do	47 25	45 33	Do.
1464	do	do	45 21	47 57	Growler.
1465	do	do	45 57	47 42	Do.
1466	do	do	47 04	46 07	Do.
1467	do	do	45 20	48 30	Radar target, possible berg.
1468	do	do	45 45	47 40	Do.
1469	do	do	46 35	46 40	Do.
1470	do	do	47 02	51 51	Do.
1471	do	do	47 03	51 30	Do.

No.	Date	Name of vessel	North latitude ° '	West longitude ° '	Description
1472	May 5	Daghestan	46 05	47 00	Large berg.
1473	do	do	46 02	46 53	3 growlers.
1474	do	Dorelian	46 09	48 26	Berg.
1475	do	do	46 07	48 28	Growler.
1476	do	do	46 03	48 07	Berg and growler.
1477	do	Fort Ticonderoga	45 44	48 35	Large berg.
1478	do	do	45 38	48 29	Small berg.
1479	do	Catrine	47 19	45 20	Berg.
1480	do	do	47 09	46 26	Do.
1481	do	do	46 47	47 15	Do.
1482	do	Dorelian	46 20	47 42	Do.
1483	do	do	46 10	47 48	Do.
1484	do	do	46 02	47 38	2 growlers.
1485	do	Catrine	46 52	47 28	2 large bergs.
1486	do	Fort Ticonderoga	45 50	47 26	Berg.
1487	do	Mariag	47 22	44 59	Do.
1488	do	do	47 18	45 23	Do.
1489	do	Fort Ticonderoga	45 52	45 44	Do.
1490	do	Dorelian	46 50	46 04	Do.
1491	do	Mendota (IP)	45 06	48 05	Do.
1492	do	do	45 14	48 02	Do.
1493	do	do	45 15	48 12	Do.
1494	do	do	45 16	48 34	Radar targets, possible bergs.
1495	do	do	45 16	48 44	Do.
1496	do	do	45 19	48 17	Do.
1497	do	Handsteen	49 30	50 30	Berg and 3 growlers.
1498	do	Ice Patrol plane	43 14	48 49	Berg.
1499	do	do	43 17	50 01	Do.
1500	do	do	43 51	48 39	Do.
1501	do	do	45 16	48 41	Do.
1502	do	do	45 19	48 23	Do.
1503	do	do	45 20	48 27	Do.
1504	May 6	do	46 09	47 46	Do.
1505	do	do	46 10	47 39	Very large berg.
1506	do	do	46 24	47 48	Berg.
1507	do	do	46 32	48 52	Do.
1508	do	do	46 33	48 37	Do.
1509	do	do	47 26	52 37	Do.
1510	do	do	47 52	51 38	Do.
1511	do	do	47 57	51 51	Do.
1512	do	do	47 57	51 56	Do.
1513	do	do	48 06	52 37	Do.
1514	do	do	48 06	52 41	Do.
1515	do	do	46 07	47 40	Growler.
1516	do	do	46 08	46 37	Radar target, possible berg.
1517	do	do	46 34	49 13	Do.
1518	do	do	47 01	46 04	Do.
1519	do	Stonridge	46 38	47 42	Berg.
1520	do	do	46 56	47 16	Do.
1521	do	Beaverburn	47 28	46 58	Do.
1522	do	do	47 02	47 42	Do.
1523	do	Beaverburn	46 52	47 38	Do.
1524	do	do	45 56	47 46	Do.
1525	do	do	46 54	48 05	Do.
1526	do	do	46 38	48 17	Do.
1527	do	do	46 29	48 27	Do.
1528	do	do	46 47	48 08	2 growlers.
1529	do	Doris Clunies	47 58	47 16	Berg.
1530	do	Stonridge	46 27	47 02	Do.
1531	do	do	46 28	47 29	Do.
1532	do	do	46 00	48 20	Do.
1533	do	Doris Clunies	47 46	48 01	Do.
1534	do	do	47 46	48 09	Do.
1535	do	do	47 40	48 10	Do.
1536	do	Evergreen (IP)	43 12	50 14	Do.
1537	do	Mendota (IP)	45 05	47 48	Do.
1538	do	do	45 07	48 11	Do.
1539	do	do	45 55	47 37	Do.
1540	do	do	45 58	47 40	Do.
1541	do	do	46 04	47 38	Do.
1542	do	do	46 06	47 43	Do.
1543	do	do	46 11	47 36	Do.
1544	do	do	45 46	47 39	Growler.
1545	do	do	46 08	47 40	Berg.
1546	do	do	46 09	47 12	Growler.
1547	do	Doris Clunies	48 22	46 12	Do.
1548	do	Southern Lillie	48 46	50 30	2 bergs.
1549	do	Doris Clunies	48 03	47 09	Berg.
1550	do	Wellington Court	48 40	49 38	4 growlers.
1551	do	Mendota (IP)	44 53	47 29	Berg.
1552	do	do	48 44	50 09	Berg and two growlers.
1553	do	Poly	48 29	50 32	Large bergs.
1554	do	do	48 12	50 57	Do.

No.	Date	Name of vessel	North latitude ° ′	West longitude ° ′	Description
1555	May 7	Ice Patrol plane	48 32	51 21	Berg.
1556	do	do	48 34	50 28	Do.
1557	do	do	48 37	49 30	Do.
1558	do	do	48 38	50 28	Do.
1559	do	do	48 38	50 43	Do.
1560	do	do	48 38	50 56	Do.
1561	do	do	48 40	51 22	Do.
1562	do	do	48 43	51 22	Do.
1563	do	do	48 46	50 40	Do.
1564	do	do	48 48	50 43	Do.
1565	do	do	48 49	51 01	Do.
1566	do	do	48 49	51 35	Do.
1567	do	do	48 50	50 32	Do.
1568	do	do	48 53	50 22	Do.
1569	do	do	48 56	51 30	Do.
1570	do	do	48 59	51 32	Do.
1571	do	do	49 02	50 08	Do.
1572	do	do	49 03	50 48	Do.
1573	do	do	49 05	50 28	Do.
1574	do	do	49 05	50 53	Do.
1575	do	do	49 06	49 45	Do.
1576	do	do	49 07	49 38	Do.
1577	do	do	49 10	50 06	Do.
1578	do	do	49 10	50 57	Do.
1579	do	do	49 15	50 34	Do.
1580	do	do	48 47	51 00	Growler.
1581	do	do	48 48	50 00	Do.
1582	do	do	48 48	50 54	Do.
1583	do	do	48 48	50 57	Do.
1584	do	do	48 50	50 34	Do.
1585	do	do	48 51	49 45	Do.
1586	do	do	48 55	50 25	Do.
1587	do	do	48 56	50 25	Do.
1588	do	do	48 56	51 29	Do.
1589	do	do	48 56	51 40	Do.
1590	do	do	48 58	50 25	Do.
1591	do	do	48 58	51 29	Do.
1592	do	do	49 00	50 00	Do.
1593	do	do	49 00	50 35	Do.
1594	do	do	49 02	50 43	Do.
1595	do	do	49 03	51 29	Do.
1596	do	do	49 04	50 07	Do.
1597	do	do	49 05	50 47	Do.
1598	do	do	49 07	50 34	Do.
1599	do	Manchester Progress	48 04	49 03	Do.
1600	do	Graiglas	47 20	47 35	Berg.
1601	do	Grand	46 25	48 35	Do.
1602	do	Frostvik	46 20	45 20	Do.
1603	do	Graiglas	47 32	47 09	Do.
1604	do	Signeborg	48 38	49 18	Do.
1605	do	Petbowsky	45 50	48 33	Do.
1606	do	do	45 53	47 40	Do.
1607	do	do	46 05	47 14	Do.
1608	do	SIEJ (call)	45 34	45 53	Do.
1609	do	Unknown	46 47	48 49	Do.
1610	do	Housteen	From 48 00	52 30	25 bergs and growlers.
			to 49 20	49 00	
1611	do	Beaverdell	46 07	47 41	Berg.
1612	do	Mendota (IP)	43 48	48 42	Do.
1613	do	Wellington Court	48 20	50 09	Large berg and growler.
1614	do	do	48 11	50 51	Large berg and flow ice.
1615	do	Beaverdell	45 45	48 23	Medium berg.
1616	do	do	45 43	48 11	Large berg.
1617	do	do	45 50	48 15	2 medium bergs and growlers.
1618	do	do	45 52	48 16	Do.
1619	do	do	45 55	48 11	Large growler.
1620	do	do	45 52	47 55	Very large berg.
1621	May 8	do	46 32	46 39	Small berg.
1622	do	do	47 05	41 25	Radar target, possible berg.
1623	do	Frostvik	43 42	48 55	Berg.
1624	do	Halifax	43 18	50 16	Large berg and growlers.
1625	do	Manchester Division	47 48	48 55	Berg.
1626	do	do	48 05	48 44	Do.
1627	do	do	48 10	48 06	Do.
1628	do	do	48 01	48 57	Growler.
1629	do	do	48 22	48 03	Do.
1630	do	Medina Victory	45 10	48 40	Large berg.
1631	do	do	45 19	48 42	Growler.
1632	do	do	45 48	48 15	Do.
1633	do	do	45 51	47 58	Small berg.
1634	do	do	45 48	47 48	Large berg.

No	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
1635	May 8	Medina Victory	45 52	47 40	Large berg.
1636	do	do	46 04	47 11	Growler.
1637	do	do	46 21	46 53	Small berg.
1638	do	do	46 21	46 20	Do.
1639	do	do	46 58	44 15	Do.
1640	do	Mendota (IP)	43 06	49 19	Berg and growlers.
1641	do	Unknown	43 05	48 10	Berg.
1642	do	Canadian Dept. of Transport by air sighting			Heavy belt of ice from Cape North rounding Scatari Island to vicinity Fourchu and scattered ice Sidney Harbor.
1643	May 9	Mont Gaspe	45 59	48 00	Berg.
1644	do	do	45 47	46 52	Do.
1645	do	Cape Breton	48 07	44 07	Do.
1646	do	Torrhead	48 06	45 51	Berg and growler.
1647	do	Monte Palo	45 51	46 52	Radar target, possible berg.
1648	do	Cape Race Radio	46 55	47 18	Berg.
1649	do	do	46 38	47 32	Do.
1650	do	do	46 34	47 48	Do.
1651	do	do	46 42	48 00	2 bergs.
1652	do	do	46 30	48 14	Do.
1653	do	do	46 24	48 30	Growlers.
1654	May 10	Torrhead	47 36	47 57	Berg.
1655	do	do	47 39	48 05	Do.
1656	do	do	47 37	48 05	Do.
1657	do	Beavercove	48 02	45 51	Growler.
1658	do	do	47 43	47 21	Do.
1659	do	Beavercove	47 35	48 26	Radar target, possible berg.
1660	do	do	47 34	48 27	Do.
1661	do	do	47 34	48 14	Do.
1662	do	Beaverbrae	46 26	47 50	Large berg.
1663	do	do	46 44	46 35	Do.
1664	do	Manchester City	47 54	49 13	Berg.
1665	do	do	47 57	49 09	Do.
1666	do	Unknown	45 44	48 32	2 bergs and 3 growlers.
1667	do	do	46 00	47 51	Berg.
1668	do	Cape Race Radio	46 39	52 57	Do.
1669	do	Canadian Dept. of Transport by air sighting			From 10 miles offshore east coast of Cape Breton and scattered over a wide area estimated from 45.50° N. to 47.00° N. eastward as far as 59.00° W.—Field ice.
1670	May 11	Beaverbrae	47 00	44 24	Radar target, possible berg.
1671	do	Baron Ramsay	43 09	50 09	Berg 120 feet high.
1672	do	Newfoundland	48 14	51 43	Berg.
1673	do	do	48 20	50 38	Do.
1674	do	Mendota (IP)	43 59	47 40	Do.
1675	do	Cape Race Radio	46 46	52 54	Do.
1676	do	M.A.T.S. N31	45 14	46 49	Do.
1677	do	Cape Race Radio	46 45	52 57	Large berg.
1678	do	Isenhower	46 32	48 02	Berg.
1679	do	Newfoundland	48 45	49 08	Growler.
1680	do	do	48 56	48 32	Berg.
1681	do	Fort Capon River	48 40	48 10	2 growlers.
1682	do	Inishowen Head	47 03	46 01	Small berg.
1683	do	Fort Capon River	48 38	48 32	Berg.
1684	do	do	48 30	48 40	Do.
1685	do	USCGC Owasco	48 20	49 30	Do.
1686	do	do	48 20	49 42	Do.
1687	do	Ocean Volunteer	48 24	46 50	Growler.
1688	do	Evergreen (IP)	44 00	48 36	Do.
1689	do	do	44 01	48 38	Berg.
1690	May 12	USCGC Owasco	48 42	49 08	Do.
1691	do	do	49 03	48 41	Do.
1692	do	do	49 03	48 40	2 growlers.
1693	do	do	49 04	48 41	Growler.
1694	do	Fort Capon River	48 22	51 40	Large berg.
1695	do	Nova Scotia	48 56	48 42	Be g and 3 growlers.
1696	do	do	48 38	49 34	Berg.
1697	do	Ice Patrol plane	43 19	50 11	Do.
1698	do	do	46 47	52 56	Do.
1699	do	Stephens	45 29	45 07	Radar target, possible berg.
1700	do	Caxton	49 51	54 33	Bergs, growlers, and pack ice.
1701	do	do	49 58	54 32	Do.
1702	do	do	49 53	54 28	Do.
1703	do	do	49 56	54 11	Do.
1704	do	do	49 58	53 55	Do.
1705	do	do	49 59	53 52	Do.
1706	do	Ice Patrol plane	44 55	46 58	2 bergs.
1707	do	do	47 26	52 38	Berg.
1708	do	do	45 23	47 37	Do.
1709	do	do	45 07	47 39	Small berg.
1710	do	do	45 07	47 26	Berg.
1711	do	do	45 50	45 29	Do.
1712	do	do	47 10	43 59	Growler.
1713	do	do	45 10	46 45	Do.
1714	do	do	45 22	47 05	Do

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
1715	May 12	Ice Patrol plane	46	07	46	09	Berg.
1716	May 13	Elysia	48	38	48	13	Small berg
1717	do	New York City	47	33	46	15	Berg.
1718	do	do	47	05	46	33	Large berg.
1719	do	do	47	15	47	00	2 large bergs.
1720	do	Nova Scotia	48	37	49	32	Radar target, possible berg.
1721	do	do	48	34	49	56	Do.
1722	do	HMCS St. Stephen	44	24	47	38	Do.
1723	do	do	44	31	47	08	Do.
1724	do	do	44	22	47	37	Berg.
1725	do	Stancourt	48	01	46	49	Large growler.
1726	do	Elysia	48	16	48	52	Small berg.
1727	do	New York City	46	54	47	37	Large berg.
1728	do	do	46	56	47	46	Large growler.
1729	do	do	46	40	47	54	Large berg.
1730	do	do	46	48	48	08	Do.
1731	do	Beaverlake	46	00	48	06	Growler.
1732	do	do	46	13	47	38	Large berg.
1733	do	do	46	20	47	33	Small berg.
1734	do	Stancourt	47	54	48	35	Large berg.
1735	do	do	47	59	48	25	Do.
1736	do	Michael	49	48	54	57	Berg and growlers.
1737	do	do	49	44	55	00	Do.
1738	do	Tabinta	46	20	47	36	Berg.
1739	do	do	46	32	47	30	Do.
1740	do	do	46	34	46	52	Berg and growler.
1741	do	Mendota (IP)	43	23	50	11	Berg.
1742	do	do	43	19	50	10	Berg aground on Banks.
1743	do	Unknown	47	51	48	10	Berg.
1744	do	do	43	23	50	10	Do.
1745	May 14	Deliran	46	55	47	21	Do.
1746	do	do	47	06	47	40	Do.
1747	do	Sominen	49	25	52	50	Do.
1748	do	do	48	25	52	50	Do.
1749	do	Struan	48	00	49	27	Do.
1750	do	do	48	05	49	39	Do.
1751	do	Lyngenfjord	48	07	48	40	Do.
1752	do	do	48	06	49	17	Do.
1753	do	do	48	03	48	11	Do.
1754	do	do	48	00	48	09	Do.
1755	do	do	48	37	47	39	Do.
1756	do	Deliran	46	24	47	54	Berg and growler
1757	do	Commerical Aircraft	45	37	47	06	Berg.
1758	do	Beaverford	46	21	47	52	Do.
1759	do	Fort Capot River	48	10	51	30	Do.
1760	do	do	48	15	51	35	Growler.
1761	do	do	48	13	51	20	Large growler.
1762	do	Mendota (IP)	47	50	51	07	Large berg.
1763	do	Stancourt	47	42	51	45	Berg.
1764	May 15	EAEA (call)	46	46	52	56	Do.
1765	do	Manchester Trader	47	57	49	05	Do.
1766	do	do	47	54	49	12	Do.
1767	do	do	47	51	49	15	Do.
1768	do	Fort Capot River	48	15	51	00	Large growler.
1769	do	Vandalia	46	23	47	07	Berg.
1770	do	do	46	26	47	34	Do.
1771	do	Port Halifax	46	48	47	07	Do.
1772	do	do	46	24	47	34	Do.
1773	do	do	46	33	47	01	Do.
1774	do	Tortugas	45	21	17	30	Do.
1775	do	Straun	47	47	51	51	Do.
1776	May 16	Montreal City	47	43	18	31	Berg and growler.
1777	do	do	47	44	48	14	Berg.
1778	do	Pencarrow	46	15	47	20	Do.
1779	do	Corinthic	48	22	48	28	Do.
1780	May 17	Ice Patrol plane	44	41	19	03	Do.
1781	do	do	44	42	48	38	Do.
1782	do	do	44	52	48	28	Do.
1783	do	do	44	54	48	39	Do.
1784	do	do	45	22	47	23	Do.
1785	do	do	45	23	47	50	Do.
1786	do	do	45	23	48	16	Do.
1787	do	do	45	25	47	08	Do.
1788	do	do	45	34	47	26	Do.
1789	do	do	15	55	47	25	Do.
1790	do	do	45	59	48	09	Do.
1791	do	do	46	01	47	30	Do.
1792	do	do	16	01	47	36	Do.
1793	do	do	47	10	47	55	Do.
1794	do	do	47	23	52	02	Do.
1795	do	do	17	25	52	38	Do.
1796	do	do	47	26	52	19	Do.
1797	do	do	17	32	49	03	Do.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
1798	May 17	Ice Patrol plane	47	33	52	06	Berg.
1799	do	do	47	38	52	35	Do.
1800	do	do	47	41	48	39	Do.
1801	do	do	47	42	50	53	Do.
1802	do	do	47	42	51	22	Do.
1803	do	do	47	43	51	03	Do.
1804	do	do	47	44	49	39	Do.
1805	do	do	47	47	50	54	Do.
1806	do	do	47	47	51	32	Do.
1807	do	do	47	50	49	27	Do.
1808	do	do	47	50	50	45	Do.
1809	do	do	47	50	52	45	Do.
1810	do	do	47	52	50	47	Do.
1811	do	do	47	52	51	50	Do.
1812	do	do	47	55	50	50	Do.
1813	do	do	47	55	51	22	Do.
1814	do	do	47	58	50	51	2 bergs.
1815	do	do	47	58	52	15	Berg.
1816	do	do	48	00	52	25	Do.
1817	do	do	48	01	49	41	Do.
1818	do	do	48	01	52	28	Do.
1819	do	do	48	03	52	40	Do.
1820	do	do	48	07	52	40	Do.
1821	do	do	48	09	52	30	Do.
1822	do	do	48	11	51	33	Do.
1823	do	do	48	14	52	03	Do.
1824	do	do	48	16	51	54	Do.
1825	do	do	48	16	52	25	Do.
1826	do	do	48	24	52	08	Do.
1827	do	do	48	29	52	26	Do.
1828	do	do	48	35	52	39	Do.
1829	do	do	48	37	52	19	Do.
1830	do	do	48	39	51	50	Do.
1831	do	do	45	14	48	01	Growlers.
1832	do	do	48	29	51	52	Do.
1833	do	do	48	31	51	41	Do.
1834	do	do	48	35	51	34	Do.
1835	do	do	44	49	49	52	Radar targets, possible bergs.
1836	do	do	44	52	50	00	Do.
1837	do	do	44	59	49	01	Do.
1838	do	do	45	29	48	27	Do.
1839	do	do	45	36	48	09	Do.
1840	do	do	46	00	47	45	Do.
1841	do	do	46	14	46	10	Do.
1842	do	do	46	17	47	20	Do.
1843	do	do	46	18	46	46	Do.
1844	do	do	46	22	46	01	Do.
1845	do	do	47	14	52	00	Do.
1846	do	do	47	28	49	26	Do.
1847	do	do	47	29	51	39	Do.
1848	do	do	47	31	51	20	Do.
1849	do	do	47	37	51	30	Do.
1850	do	Blairesk	48	08	49	12	Growler.
1851	do	do	47	55	49	42	Berg and growler.
1852	do	Evergreen (IP)	45	19	47	11	Berg.
1853	do	Kattegatt	47	30	46	03	Berg and growlers.
1854	do	do	47	29	46	08	Do.
1855	do	Nordfarer	43	35	49	59	Berg.
1856	do	Whiteshell Park	44	35	48	39	Do.
1857	do	Evergreen (IP)	45	15	47	21	Do.
1858	do	do	45	11	47	19	Growlers.
1859	do	do	45	12	47	17	Do.
1860	do	do	45	14	47	12	Do.
1861	do	Consuelo	47	42	51	27	Berg.
1862	do	do	47	32	51	02	Do.
1863	do	do	47	32	50	56	Do.
1864	do	do	47	36	50	52	Berg and growler.
1865	do	Mendota (IP)	47	24	52	23	Berg.
1866	do	do	47	23	52	33	Do.
1867	do	do	47	26	52	38	Do.
1868	do	Narvik	49	00	50	00	Large berg.
1869	do	do	48	45	50	30	Do.
1870	do	Mocoma (IP)	44	44	45	50	Do.
1871	do	Cape Race Radio	46	45	52	55	Berg.
1872	May 18	Consuelo	48	32	50	42	Do.
1873	do	do	47	49	50	33	2 bergs.
1874	do	Mendota (IP)	46	46	52	56	Berg.
1875	do	Evergreen (IP)	45	07	48	00	2 growlers.
1876	do	do	45	16	47	44	Berg.
1877	do	do	45	14	48	05	Do.
1878	do	do	45	15	48	08	Do.
1879	do	USCGC Duane	48	49	49	39	Do.
1880	do	Consuelo	48	19	50	17	Do.

No.	Date	Name of vessel	North latitude ° ′	West longitude ° ′	Description
1881	May 18	Consuelo	48 20	49 55	Berg.
1882	do	do	48 13	49 20	Do.
1883	do	USCGC Duane	48 47	50 17	Do.
1884	do	do	48 39	50 10	Do.
1885	do	Burnside	44 40	45 35	Do.
1886	do	USCGC Duane	48 26	50 31	Growler.
1887	do	do	48 21	50 40	Do.
1888	do	do	48 19	50 04	Do.
1889	do	do	47 49	50 47	Bergs.
1890	do	do	47 49	50 56	Do.
1891	do	do	47 43	50 41	Do.
1892	do	do	47 54	51 00	Do.
1893	do	do	47 42	51 23	Do.
1894	do	do	47 32	51 21	Do.
1895	do	Beaconsfield	46 06	47 21	Growler.
1896	do	Irish Torch	between 47 33 and 47 28	47 26 and 48 05	5 bergs and 2 growlers.
1897	do	Arabia	45 43	47 13	Berg.
1898	do	do	45 40	47 30	Do.
1899	do	African Prince	47 15	52 37	Do.
1900	do	do	47 25	52 26	Do.
1901	do	do	48 25	52 38	Do.
1902	do	Mocoma (IP)	44 19	45 24	Same as berg on 17th (1870).
1903	do	do	44 20	45 21	Berg and numerous growlers—10-mile radius.
1904	do	Unknown	46 08	46 33	Growler.
1905	do	Cape Race Radio	47 17	52 38	Berg.
1906	do	do	47 25	52 38	Do.
1907	do	do	47 23	52 29	Do.
1908	May 19	Prins Johanwellem	47 24	48 17	2 bergs.
1909	do	Doris Clunies	47 28	50 57	Berg.
1910	do	do	47 36	49 32	Radar target, possible berg.
1911	do	do	47 43	49 37	Do.
1912	do	do	47 51	49 57	Berg.
1913	do	Irish Torch	46 50	51 00	Do.
1914	do	Baron Tweedmouth	47 36	51 30	Do.
1915	do	do	47 40	51 06	3 bergs and growlers within 2-mile radius.
1916	do	do	48 08	50 39	2 bergs and growlers within 4-mile radius.
1917	do	do	48 08	50 10	Large berg.
1918	do	do	48 28	50 10	Berg and growler.
1919	do	do	48 33	49 38	Berg.
1920	do	Pan Amolga	45 16	48 19	Do.
1921	do	do	45 21	47 51	Berg and 6 growlers.
1922	do	Maine	47 55	49 26	Berg.
1923	do	do	47 46	49 45	Do.
1924	do	do	48 09	49 51	Do.
1925	do	do	47 40	49 44	Do.
1926	do	Mocoma (IP)	44 23	45 06	Do.
1927	do	do	44 26	45 03	Do.
1928	May 20	Fort Musquarro	47 16	51 14	Do.
1929	do	Panamolga	45 07	46 31	Do.
1930	do	Asia	47 12	49 38	2 growlers.
1931	do	do	47 24	49 34	Berg.
1932	do	do	47 32	48 55	Do.
1933	do	do	47 19	48 46	Do.
1934	do	Runnymede Park	47 45	49 28	Berg with growlers westward.
1935	do	Fort Musquarro	47 42	49 52	3 bergs.
1936	do	Wabana	47 51	52 41	Berg.
1937	do	do	47 51	52 48	Do.
1938	do	Blekinge	46 14	47 34	Do.
1939	do	do	46 16	47 24	Do.
1940	do	Runnymede Park	47 38	49 50	Do.
1941	do	Tongariro	47 43	49 01	Berg and growler.
1942	do	do	47 48	49 10	Berg.
1943	do	Mocoma (IP)	44 30	45 00	Numerous growlers, 10-mile radius (same as on 19th).
1944	do	do	44 27	45 00	Berg and 4 growlers.
1945	do	Unknown	47 34	40 55	Berg.
1946	May 21	Granpond	47 03	49 20	Radar target, possible berg.
1947	do	do	47 07	49 11	Growler.
1948	do	do	47 11	49 05	Do.
1949	do	Tongariro	47 38	49 17	3 bergs.
1950	do	Granpond	47 46	47 57	Radar target, possible berg.
1951	do	Iceland	48 30	49 15	Growler.
1952	do	Unknown	47 43	49 17	Bergs.
1953	do	do	47 46	49 17	Do.
1954	do	do	47 50	49 17	Do.
1955	May 22	Beaverburn	47 32	49 42	Radar target, possible berg.
1956	do	do	47 40	49 48	Do.
1957	do	do	47 34	49 42	Do.
1958	do	do	43 17	49 52	Do.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
1959	May 22	USAF 5544 (aircraft)	45	12	46	27	Large berg.
1960	do	Danybron	43	26	49	01	2 small bergs.
1961	do	W. S. Jennings	43	05	49	42	Growler.
1962	do	Empire Captain	47	38	49	29	Radar target, possible berg.
1963	do	W. S. Jennings	42	57	50	00	Large berg.
1964	do	American	43	15	49	24	Do.
1965	do	Mendota (IP)	43	16	49	44	Berg.
1966	do	W. S. Jennings	43	17	49	52	Large berg.
1967	May 23	Mendota (IP)	43	25	49	36	Growler.
1968	do	USCGC Dexter	47	40	49	40	Berg.
1969	do	do	47	45	49	18	Radar target, possible berg.
1970	do	do	47	42	49	23	Do.
1971	do	Kirsten	44	40	47	50	Berg.
1972	do	Tynemouth	47	24	49	15	Large berg.
1973	May 24	Uffington Court	48	13	50	16	Berg.
1974	do	Beavercove	47	12	49	31	Do.
1975	do	do	47	16	49	03	Do.
1976	do	do	47	40	47	31	Radar target, possible berg.
1977	do	Aida	44	45	49	25	Berg.
1978	May 25	Lototium	46	45	52	57	Do.
1979	do	Manchester Commerce	47	33	49	55	Washed berg.
1980	do	Empress of Canada	47	57	49	45	Berg.
1981	do	Cape Race Radio	47	08	49	46	Do.
1982	do	do	47	24	49	00	Do.
1983	do	USAT FS233	48	10	52	15	2 small bergs and 2 growlers
1984	May 26	Lake George	43	20	49	48	Berg.
1985	do	Mendota (IP)	44	29	48	22	Do.
1986	do	do	44	31	49	05	Do.
1987	do	do	44	26	49	12	Growler.
1988	do	do	44	42	48	39	Berg.
1989	May 27	do	44	47	48	46	Do.
1990	do	do	45	01	49	13	Do.
1991	do	do	44	54	48	34	Do.
1992	do	Howard Stansbury	43	40	46	18	Large berg.
1993	do	Nova Scotia	47	26	52	39	Berg.
1994	do	do	47	24	52	35	Do.
1995	do	do	46	53	52	39	Radar target, possible berg.
1996	do	USS Whitewood	48	54	52	16	Berg.
1997	do	do	48	29	52	10	Do.
1998	do	do	48	29	52	07	Do.
1999	do	do	48	21	52	05	Do.
2000	do	do	48	20	52	16	Do.
2001	do	do	48	16	52	29	Do.
2002	do	Marengo	47	02	48	10	Do.
2003	do	USS Whitewood	48	03	52	18	Do.
2004	do	Newfoundland	48	05	51	20	Small berg.
2005	do	Bonde	48	15	52	39	Berg.
2006	do	HMCS St. Stephen	48	57	51	29	Do.
2007	do	do	49	03	51	23	Growler.
2008	do	do	49	01	51	13	Berg.
2009	do	do	49	23	51	24	Do.
2010	do	do	48	45	51	28	Do.
2011	do	USS Whitewood	47	27	52	38	Do.
2012	do	do	47	14	52	42	Do.
2013	do	do	47	07	52	46	Do.
2014	May 28	Nova Scotia	48	12	51	10	Radar target, possible berg.
2015	do	Lord Glentoran	47	44	48	54	Several growlers.
2016	do	do	47	46	48	56	Berg.
2017	do	Egidia	45	57	48	57	Growler.
2018	do	Krageholm	43	48	47	13	Large berg.
2019	do	Mendota (IP)	43	54	47	07	Do.
2020	May 29	Lord Glentoran	47	48	49	07	Berg.
2021	do	do	47	43	48	58	Do.
2022	do	do	47	40	48	58	Do.
2023	do	Pan American World Airways	45	00	46	30	Large berg.
2024	May 30	Merchant Knight	47	44	49	08	Berg.
2025	do	Beaverdell	47	52	47	33	Radar target, possible berg.
2026	May 31	do	47	41	48	49	Berg.
2027	June 1	Stanthorpe	44	31	45	44	Small berg.
2028	do	Beaverbrae	47	55	48	14	Radar target, possible berg.
2029	do	do	47	37	48	46	Do.
2030	do	do	47	44	49	22	Berg.
2031	do	do	47	22	49	37	Do.
2032	do	Stanford	46	18	48	10	Do.
2033	do	Graigwen	46	45	47	15	Growler.
2034	do	do	46	35	48	00	2 bergs.
2035	do	Beaverbrae	47	00	51	43	Radar target, possible berg.
2036	do	Matianne	46	40	48	15	Berg.
2037	do	Wickenham	47	43	48	10	Do.
2038	do	Mendota (IP)	44	20	46	20	Do.
2039	June 2	do	43	40	45	53	Berg (same as above).
2040	do	do	43	26	45	47	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
2041	June 3	Beaverford	47 57	49 00	Growler.
2042	do	Beckenham	47 52	49 20	Berg and several growlers.
2043	do	Irish Larch	47 38	49 02	Berg.
2044	do	do	47 50	48 48	Growler.
2045	do	Hada County	47 43	47 23	Berg.
2046	do	Nevada	49 06	50 20	Do.
2047	do	do	49 01	50 21	Do.
2048	do	Mendota (IP)	43 24	45 36	Berg (same as 2040).
2049	June 4	Nandi	47 51	49 07	Large berg.
2050	do	Chumleigh	47 30	47 30	Berg.
2051	do	do	47 36	46 35	Do.
2052	do	Alvaro Martins Homen	45 25	48 45	Do.
2053	do	Mendota (IP)	43 24	44 01	Growlers (same as 2048).
2054	June 5	Cape Race Radio	46 46	52 51	Large berg.
2055	do	Bonnina	49 16	40 29	Berg.
2056	do	Norefjord	45 37	48 42	Large growler.
2057	do	Mendota (IP)	44 01	44 02	Growler (same as 2053).
2058	do	do	44 15	43 57	Growler (same as 2057).
2059	June 6	John Schofield	41 19	45 16	Small berg.
2060	do	Marine Tiger	40 25	52 58	Red gas buoy.
2061	do	Nevada	48 12	52 15	Berg.
2062	do	Mendota (IP)	44 52	47 07	Berg with many small growlers.
2063	do	Joana	45 51	48 47	Large berg.
2064	June 7	Sibley Park	47 37	48 34	Do.
2065	do	Laholm	46 38	47 30	Berg.
2066	do	do	46 30	47 27	Do.
2067	do	Tabinta	47 53	47 58	Do.
2068	do	Ice Patrol plane	44 05	49 26	Do.
2069	do	do	45 17	46 49	Do.
2070	do	do	45 38	46 32	Do.
2071	do	do	46 10	47 02	Do.
2072	do	do	46 45	52 57	Do.
2073	do	do	47 25	52 38	Do.
2074	do	USCGC Owasco	57 19	39 32	Growler.
2075	June 8	Ice Patrol plane	47 28	52 37	Bergs.
2076	do	do	47 43	47 28	Do.
2077	do	do	48 01	46 14	Do.
2078	do	do	48 06	47 42	Do.
2079	do	do	48 16	53 03	Do.
2080	do	do	48 18	51 08	Do.
2081	do	do	48 19	51 49	Do.
2082	do	do	48 28	52 49	2 bergs.
2083	do	do	48 28	53 03	7 bergs.
2084	do	do	48 31	52 44	Berg.
2085	do	do	48 35	52 30	Do.
2086	do	do	47 21	47 02	Radar target, possible berg.
2087	do	do	48 07	47 11	Do.
2088	do	do	48 07	47 25	Do.
2089	do	do	48 21	47 42	Do.
2090	do	do	48 35	50 16	Do.
2091	do	Calvin Victory	48 00	47 42	Berg.
2092	do	Joshua Thomas	48 42	50 02	Do.
2093	do	do	48 15	51 36	Do.
2094	do	do	47 58	52 26	Do.
2095	do	Cape Race Radio	48 00	47 47	Do.
2096	do	do	48 04	48 44	Do.
2097	do	Beaverglen	48 00	47 47	Berg with pieces.
2098	do	Battle Harbor Radio	Off Camp Island, Niger Sound		2 large bergs.
2099	June 9	Beaverglen	46 40	52 17	Radar target, possible berg.
2100	do	Caxton	47 55	52 32	Berg.
2101	do	Mont Sanda	48 22	47 16	Berg and growler
2102	do	do	48 29	48 28	Berg.
2103	do	Ice Patrol plane	47 07	47 23	Do.
2104	do	do	47 19	46 52	Do.
2105	do	do	47 21	47 23	Do.
2106	do	do	47 28	46 57	Do.
2107	do	do	47 30	47 03	Do.
2108	do	do	48 12	52 07	Do.
2109	do	do	48 12	52 48	Do.
2110	do	do	48 15	47 20	Do.
2111	do	do	48 18	51 52	Do.
2112	do	do	48 37	49 23	Do.
2113	do	do	48 56	49 48	Do.
2114	do	do	48 58	48 57	Do.
2115	do	do	48 19	47 21	Growler.
2116	do	do	48 51	49 00	Do.
2117	do	do	49 38	52 43	Do.
2118	do	do	49 32	52 47	Berg.
2119	do	do	48 46	52 27	Radar targets, possible bergs.
2120	do	do	48 58	53 10	Do.
2121	do	do	49 03	52 55	Do.
2122	do	do	49 04	50 18	Berg.

Table of Ice and Obstruction Reports South of 50° N., 1948—Continued

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
2123	June 10	USCGC Spencer	46	31	47	08	Berg.
2124	do	Norwegian	48	06	47	07	Large berg.
2125	do	Consuelo	48	47	49	00	Do.
2126	do	Fort Erie	48	22	49	22	Berg.
2127	do	Bomina	48	05	51	49	Do.
2128	do	Consuelo	48	17	49	14	Do.
2129	do	Joshua Thomas	48	07	51	04	Berg and growler.
2130	do	Mercury	47	49	47	19	Berg and 4 growlers.
2131	do	do	47	55	47	04	Berg and 2 growlers.
2132	do	Southern Wilcox	48	47	52	56	Berg.
2133	do	do	48	49	53	03	Do.
2134	do	Beaverlake	47	59	47	29	Do.
2135	June 11	Leon S. Merrill	39	51	51	38	Steel tank 25 feet long.
2136	do	do	39	55	51	07	Tree trunk 30 feet long, 2 feet diameter.
2137	June 12	Irene K	48	20	50	03	Berg.
2138	do	Britkon	49	04	53	02	Large berg.
2139	do	Bastogne	40	26	51	45	Red buoy adrift.
2140	June 13	Nova Scotia	48	59	48	44	Berg and 5 growlers.
2141	do	Tower Grange	48	24	50	39	Berg.
2142	do	do	47	53	52	02	Do.
2143	do	Nova Scotia	48	13	50	28	Large and small berg.
2144	do	Cydonia	46	52	47	54	2 bergs.
2145	do	Nova Scotia	48	01	51	52	Large berg.
2146	do	do	47	27	52	09	Berg.
2147	do	HMCS St. Stephen	48	08	51	59	Do.
2148	do	do	48	39	51	31	Do.
2149	do	Cape Race Radio	48	12	50	35	Berg (same as 2095).
2150	do	Tower Grange	48	00	51	47	Berg (same as 2141).
2151	do	do	45	36	47	19	Do.
2152	do	Ice Patrol plane	46	44	53	00	2 bergs.
2153	do	do	45	28	47	30	Growler.
2154	do	do	45	34	47	32	Do.
2155	do	do	45	34	47	56	Radar target, possible berg.
2156	do	do	45	35	47	30	Do.
2157	do	Belocean	40	35	54	21	Large steel cylinder painted red.
2158	June 14	Asia	47	34	49	56	Berg.
2159	do	L'aventure (French Navy)	45	58	48	04	Do.
2160	do	do	45	39	47	58	Do.
2161	do	Tunaholm	45	19	47	27	Do.
2162	do	do	45	21	48	10	Do.
2163	do	do	45	32	47	31	Do.
2164	do	Carnvalona	47	54	50	20	Small berg.
2165	do	do	47	55	50	28	Do.
2166	do	Miguel de Larrinaga	48	00	52	00	Berg.
2167	do	do	48	15	50	35	Do.
2168	do	Commerical aircraft	46	37	47	54	2 bergs.
2169	do	Ice Patrol plane	44	47	46	15	Berg.
2170	do	do	47	26	52	08	Do.
2171	June 15	Empire Caicos	46	20	47	00	Do.
2172	do	do	46	13	47	29	2 growlers.
2173	do	Stanford	46	23	47	33	2 bergs.
2174	do	do	46	56	42	52	Small berg.
2175	June 16	L'aventure (French Navy)	45	13	48	31	Berg.
2176	do	Nova Scotia	47	32	52	29	Radar target, possible berg.
2177	do	Mocoma (IP)	44	41	45	36	Berg and 2 growlers 5 miles south.
2178	do	do	44	48	45	22	Berg.
2179	do	Ice Patrol plane	46	12	47	52	2 bergs.
2180	do	do	45	44	48	35	Radar targets, possible bergs.
2181	do	do	47	25	51	04	Do.
2182	do	Mocoma (IP)	44	48	45	22	Berg with growler 10 miles radius (same as 2177).
2183	June 17	Beavercove	47	13	49	32	Radar target, possible berg.
2184	do	Hada County	48	31	51	48	Large berg.
2185	do	do	48	05	52	20	Berg and growler.
2186	do	Vendaval	44	50	49	10	1 berg and several growlers.
2187	do	Mocoma (IP)	44	55	45	08	Berg and numerous growlers.
2188	do	Wabana	47	46	52	35	Berg.
2189	do	Baskerville	47	54	50	55	Growler.
2190	do	Mocoma (IP)	44	47	45	15	Berg and numerous growlers (same as 2187).
2191	June 18	do	45	09	45	55	Berg (same as 2190).
2192	do	Spanish Trawler Cierzo	45	45	48	36	Do.
2193	do	do	45	38	48	44	Do.
2194	do	Ice Patrol plane	46	42	53	03	Do.
2195	do	do	47	42	52	38	Do.
2196	do	do	45	13	48	31	Do.
2197	do	do	45	18	48	44	Do.
2198	do	do	47	36	52	39	Do.
2199	June 19	Mattabesset	48	04	52	29	Do.
2200	do	Mocoma (IP)	45	47	43	40	Do.
2201	do	Ice Patrol plane	45	28	48	00	Do.
2202	do	do	45	31	48	01	Do.
2203	do	do	45	42	48	53	Do.
2204	do	do	45	43	48	20	Do.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
2205	June 19	Ice Patrol plane	45	38	44	08	Berg (same as 2190).
2206	do	do	47	26	52	38	Do.
2207	June 20	Mocoma (IP)	46	02	42	59	Growler.
2208	do	Ice Patrol plane	44	26	48	53	Do.
2209	do	do	45	02	49	13	Berg.
2210	do	do	45	16	49	31	Do.
2211	do	Livia	50	07	50	25	Do.
2212	do	do	50	11	50	27	Growler.
2213	do	Mascoma	40	33	46	10	Round metallic object about 3 feet diameter resembling mine.
2214	do	Portugal	34	40	30	22	Can buoy.
2215	do	Tranvik	47	00	45	10	Drifting buoy.
2216	June 21	City of Aukland	47	34	49	35	Berg.
2217	do	USCGC Sorrel	47	17	52	35	Do.
2218	do	do	48	07	52	27	Do.
2219	do	Louisberg	47	18	52	35	Do.
2220	do	Fort Grouard	48	00	52	19	Do.
2221	June 22	do	48	07	52	13	Do.
2222	do	Mendota (IP)	45	23	47	46	Do.
2223	do	Ice Patrol plane	45	38	48	40	Do.
2224	do	do	44	34	48	36	Large growler.
2225	do	do	45	43	48	09	Berg.
2226	do	do	45	24	47	49	Do.
2227	do	do	45	25	47	37	Growler.
2228	do	do	47	08	52	37	Bergs.
2229	do	do	47	25	52	37	Do.
2230	June 23	Mendota (IP)	44	33	48	28	Berg.
2231	do	do	44	31	48	25	Berg (same as 2230).
2232	do	Empire Chairman	47	37	52	23	Large berg.
2233	do	Cape Race Radio	47	11	52	41	Berg.
2234	do	do	46	47	52	50	Do.
2235	do	William N. Paige	47	20	48	45	Do.
2236	do	Mendota (IP)	44	31	48	25	Berg (same as 2231).
2237	June 24	do	44	20	48	17	Berg (same as 2236).
2238	do	do	44	24	47	49	Berg (same as 2237).
2239	do	Exiria	40	03	47	58	Extinguished red gas buoy.
2240	do	Mariero	45	00	48	42	Berg.
2241	do	Svanefjell	47	32	49	55	Do.
2242	do	do	47	27	50	14	Do.
2243	do	do	46	30	52	55	Do.
2244	do	Blanche F. Sigman	42	19	46	47	Tree 3 feet diameter, 20 feet long.
2245	do	Ice Patrol plane	47	12	48	45	Berg.
2246	do	do	47	25	52	15	Do.
2247	do	do	47	35	49	54	Do.
2248	do	do	47	22	48	43	Growler.
2249	do	do	47	25	49	50	Berg.
2250	June 25	Mendota (IP)	44	28	47	27	Growler (same as 2238).
2251	do	do	44	45	47	18	Growler (same as 2250).
2252	do	Uskside	47	51	49	04	Berg.
2253	do	USS Tanner	46	37	52	52	Do.
2254	do	do	47	31	52	15	Do.
2255	do	Uskside	47	25	50	02	Small berg.
2256	do	Beaconsfield	47	43	48	45	Do.
2257	do	do	47	25	49	50	Do.
2258	do	Tabinta	47	27	49	50	Small berg (same as 2257).
2259	do	William F. Cody	40	05	35	35	Floating log resembling piling 20 feet long, 2 feet diameter.
2260	do	Exiria	40	13	42	27	First class nun buoy, red and black H.S.
2261	do	Pietro Gori	35	18	48	26	Floating and partially submerged liferaft.
2262	do	Wolverine State	39	34	47	46	Drifting light buoy.
2263	June 26	Mendota (IP)	44	52	46	28	Growler.
2264	do	do	45	04	46	20	Do.
2265	do	Cape Race Radio	46	49	52	40	Small berg.
2266	do	do	46	37	52	46	Medium berg.
2267	do	do	46	38	52	54	3 small growlers.
2268	do	USAT LT 532	46	50	52	52	Berg.
2269	do	do	46	38	52	44	Do.
2270	do	do	46	36	52	50	Growler.
2271	do	do	46	39	52	54	Do.
2272	do	do	46	30	52	54	Do.
2273	do	Lyon Phelps	40	56	46	23	Drifting mine.
2274	do	Beauregar	39	22	47	13	Drifting gas buoy.
2275	June 27	USCGC Sorrel	46	38	52	40	Berg.
2276	do	do	46	51	52	36	Do.
2277	do	do	48	46	52	41	Do.
2278	do	Ice Patrol plane	46	40	52	32	Do.
2279	do	do	46	52	52	27	Growler.
2280	do	do	44	25	48	00	Berg.
2281	do	Empire Charmiane	48	08	47	55	Do.
2282	do	Prince Johan Willem	47	59	48	09	Do.
2283	do	Port Jackson	48	00	47	43	Do.
2284	do	do	47	19	48	02	Growler.
2285	do	do	47	36	52	20	Berg.

No.	Date	Name of vessel	North latitude °	′	West longitude °	′	Description
2286	June 27	Port Jackson	47	51	49	17	Berg.
2287	do	do	47	57	47	49	Do.
2288	do	do	48	00	52	45	Do.
2289	do	do	48	35	52	02	Do.
2290	June 28	Ice Patrol plane	48	02	47	38	Do.
2291	do	do	48	40	52	54	Do.
2292	do	do	49	05	53	25	Do.
2293	do	Mendota (IP)	44	31	47	52	Growler.
2294	do	do	44	28	47	58	Growler (same as 2293).
2295	do	Empire Boswell	48	02	47	38	Berg.
2296	do	Port Jackson	46	37	52	08	Do.
2297	do	Thomas F. Baker	41	53	45	57	Reddish brown doughnut raft.
2298	do	Nova Scotia	47	41	52	26	Berg with growlers.
2299	June 29	USCGC Androscroggin	46	40	52	26	Berg.
2300	do	do	47	40	48	32	Do.
2301	do	Fort Nisqually	46	40	52	40	Do.
2302	June 30	INQH (Radio call sign)	47	36	52	23	Do.
2303	do	USCGC Sebago	46	37	52	36	Do.
2304	do	Benjamin H. Brestow	40	42	45	42	Drifting red flashing buoy every 2 seconds.
2305	do	Ezra Meech	47	48	46	58	Berg.
2306	do	Mendota (IP)	47	58	47	08	Large berg.
2307	do	do	47	43	48	13	Do.
2308	July 1	do	47	38	47	47	Berg.
2309	do	USCGC Sebago	48	30	47	00	Radar target, possible berg.
2310	July 6	USCGC Ingham	48	17	52	24	Berg.
2311	July 7	D/M 131	48	12	52	26	Berg and 2 growlers.
2312	Dec. 2	FS 289(USAT)D/M 234	46	32	55	52	Bergs.

Table of Ice and Obstruction Reports North of 50 N., 1948

Date	Name of vessel	North latitude ° ′	West longitude ° ′	Description
Feb. 6	Ice Patrol plane	50 24	52 15	Heavy weathered pan.
Do	do	50 08	53 10	Tight field ice.
Do	do	51 22	52 58	Small growler.
Do	do	From 50 20 to 50 50 51 10 51 30 51 54	 52 12 52 07 52 20 53 17 53 05	Occasional pan ice.
Do	do	Eastward from Cape Fogo past Cape Freels to 49 10 extending 15 miles offshore.	 53 00	Field ice.
Feb. 17	do	From 51 00 to 50 00 49 20 48 30 48 23	 52 30 51 50 50 50 51 20 52 40	Outer limits of field ice containing sludge.
Feb. 19	USCGC Sorrel	Simiutak to Narsak		Scattered growlers.
Do	do	Narsak to Narsarssuak		4/10 fjord ice, navigable.
Do	do	Cape Brede Fjord		Scattered growlers.
Feb. 20	Ice Patrol plane			Light field ice south of 50°30′ N. Heavy field ice north of 50°30′ N.
Do	do	From 51 05 to 52 00 53 15 54 50	 52 42 53 30 53 10 55 00	Eastern limits of ice.
Do	do	51 15	53 50	Berg.
Do	do	51 26	54 04	Do.
Do	do	51 26	53 04	Do.
Do	do	51 34	54 08	Do.
Do	do	51 40	52 52	Do.
Do	do	51 45	52 40	Do.
Do	do	52 20	53 40	3 bergs.
Do	do	52 20	53 00	Numerous bergs.
Do	do	53 08	52 52	Large berg.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
Feb. 20	Ice Patrol plane	From 53 30 to 54 30	 54 10 55 10	Numerous bergs along this line.
Do	do	From 50 00 to 51 00 53 17 55 05	 53 00 52 13 53 13 54 10	Outer limits main field ice.
Do	do	51 18	54 25	Berg.
Do	do	51 38	52 18	Do.
Do	do	51 41	52 06	Do.
Feb. 21	USCGC Sorrel	Tunugliarfic Fjord		Growlers.
Do	do	Skovf Fjord		Do.
Do	do	East entrance Prince Christian Fjord		Fast ice, not navigable.
Do	do	Fredericksdahl		Scattered fields of ice 20 to 30 miles to seaward.
Mar. 1	Ice Patrol plane	50 13	53 20	Berg.
Do	do	50 03	53 50	Do.
Do	do	50 10	54 35	Do.
Do	do	50 08	55 01	Do.
Do	do	From 50 00 to 50 10	 53 10 55 00	Numerous growlers.
Mar. 3	do	From 50 40 to 49 40 47 50	 53 20 53 20 52 10	Field ice.
Do	do	From 52 00 to 51 00 46 55 47 00	 52 50 52 10 52 00 52 50	Strings of slush and sludge.
Mar. 11	do	51 10	52 24	Field ice.
Do	do	51 55	52 12	Do.
May 12	Caxton	50 04	53 40	Berg.
Do	do	51 05	53 32	2 growlers.
May 13	do	50 12	53 12	Small bergs.
Do	do	50 17	53 10	Do.
Do	do	50 18	52 52	Growlers.
Do	do	50 14	52 49	Berg and growlers.
Do	do	50 35	52 40	Large berg
Do	Michael	50 17	53 48	Do.
May 20	do	50 01	54 17	Berg.
Do	do	50 13	54 14	Do.
May 28	HMCS St. Stephen	51 30	51 10	Do.
Do	Liria	50 06	53 51	Do.
Do	do	50 08	53 10	Do.
Do	do	50 09	53 07	Do.
Do	do	50 09	53 17	Do.
June 9	USCGC Owasco	50 40	48 38	Do.
June 24	Baron Stranraer	52 30	35 20	Do.
June 27	USS Tanner	51 04	54 11	Do.
Do	do	51 23	54 21	Growler.
Do	do	51 10	54 38	Do.
Do	do	52 41	54 56	Large berg.
June 28	do	53 05	55 32	1 large, 2 small bergs.
Do	do	53 00	55 03	Large berg.
Do	Ice Patrol plane	50 33	54 00	Berg.
Do	do	50 57	54 41	Do.
Do	do	51 12	55 34	Do.
Do	do	51 38	55 23	Do.
Do	do	51 43	55 35	Do.
Do	do	51 49	55 28	Do.
Do	do	51 50	55 38	Do.
Do	do	51 51	55 32	Do.
Do	do	52 02	55 37	Do.
Do	do	52 08	55 40	Do.
Do	do	52 09	55 40	Do.
Do	do	52 10	55 38	Do.
Do	do	52 10	55 40	Do.
Do	do	52 17	55 32	Do.
Do	do	52 23	55 36	Do.
Do	do	52 26	54 21	Do.
Do	do	52 31	54 56	Do.
Do	do	52 31	55 39	Do.
Do	do	52 33	55 39	Do.
Do	do	52 34	55 39	Do.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
June 28	Ice Patrol plane	52 38	54 38	Berg.
Do	do	52 39	55 42	Do.
Do	do	52 40	55 43	Do.
Do	do	52 46	55 46	Do.
Do	do	52 47	54 52	Do.
Do	do	52 51	55 46	Do.
Do	do	52 53	55 47	Do.
Do	do	52 56	55 38	Do.
Do	do	52 56	55 46	Do.
Do	do	52 57	55 46	Do.
Do	do	52 58	55 25	Do.
Do	do	52 58	55 45	Do
Do	do	53 02	55 42	Do.
Do	do	53 03	55 41	Do.
Do	do	53 03	55 43	Do.
Do	do	53 11	55 41	Do.
Do	do	53 15	53 04	Do
Do	do	53 16	55 00	Do.
Do	do	53 17	55 40	Do.
Do	do	53 18	54 52	Do.
Do	do	53 18	55 40	Do.
Do	do	53 26	55 41	Do.
Do	do	53 31	53 07	Do.
Do	do	53 32	55 46	Do.
Do	do	53 34	52 36	Do.
Do	do	53 40	55 06	Do.
Do	do	53 55	55 15	Do.
Do	do	53 56	55 05	Do.
Do	do	54 06	55 58	Do.
Do	do	54 06	56 02	Do.
Do	do	54 09	55 40	Do.
Do	do	54 23	55 58	4 bergs.
Do	do	51 15	54 21	Growler.
Do	do	51 31	54 03	Do.
Do	do	51 33	54 10	Do.
Do	do	52 38	54 59	Do.
Do	do	52 48	51 54	Do
Do	do	52 56	55 12	Do.
Do	do	53 12	55 22	Do.
Do	do	53 18	54 17	Do.
Do	do	53 39	55 14	Do.
Do	do	North side of Belle Isle Strait.		Scattered bergs.
Do	do	Labrador Coast North of 54.00°.		Do.
June 30	Marengo	51 45	55 44	Growler.
July 2	Belle Isle Radio	51 44	55 57	Berg.
Do	do	51 46	55 28	Do.
Do	do	51 47	55 34	Do.
Do	do	51 48	55 32	Do.
Do	do	51 47	55 25	Do.
Do	do	51 47	55 44	Growler.
July 8	USS Chukawan	52 09	54 18	Berg.
Do	do	53 12	55 05	Do.
Do	USS Noxubee	51 38	54 15	Do.
Do	do	52 15	54 10	Do.
Do	do	52 18	54 40	Do.
July 11	Evergreen (IP)	53 20	55 23	4 bergs, numerous growlers.
Do	do	53 20	54 45	Berg.
Do	do	53 30	55 35	3 bergs.
Do	do	53 53	55 55	Berg.
Do	do	53 34	55 40	Do.
July 15	Curtis F. Shoup	52 15	52 30	Do.
July 18	Hydrolant	51 32	56 15	Do.
Do	do	51 45	55 40	Do.
July 19	do	51 10	53 50	3 bergs.
Do	do	54 00	55 03	Berg.
July 21	Blairesk	51 46	55 27	Several growlers.
July 26	Nespelen	59 17	46 38	3 bergs.
July 27	do	59 35	46 54	3 bergs, many growlers.
July 29	do	60 31	47 14	Many large bergs.
Aug. 22	Daigas	58 25	43 25	Berg.
Do	do	58 00	44 18	Do.
Do	do	57 54	44 25	Do.
Aug. 30	USS Chukawan	50 46	53 48	Do.
Aug. 31	Commercial Aircraft	56 55	44 49	Do.
Sept. 5	USCGC McCulloch	50 18	53 52	Do.
Sept. 6	Uskport	52 09	54 09	Do.
Sept. 7	USS Schmitt	52 04	54 18	Do.
Sept. 10	Stanthorpe	58 56	45 43	Small berg.
Sept. 12	do	60 30	61 54	Large berg.
Do	do	60 41	63 24	Do.
Do	do	60 48	63 36	Do.

Date	Name of vessel	North latitude °	′	West longitude °	′	Description
Sept. 12	Stanthorpe	60	38	63	46	Large berg.
Do	do	60	45	63	48	Small growler.
Do	do	60	42	64	00	Large berg.
Do	do	60	40	64	00	2 growlers.
Do	do	61	18	65	00	Small berg and growler.
Do	do	61	20	65	23	Large berg.
Do	do	61	20	65	23	2 bergs.
Do	do	61	22	65	37	4 bergs.
Do	do	61	20	65	57	Berg.
Do	do	61	04	66	20	Do.
Do	do	61	08	66	20	4 growlers.
Do	do	61	15	66	17	Berg.
Do	do	61	18	66	24	Do.
Do	do	61	19	66	28	Do.
Do	do	61	20	66	30	Growler.
Do	do	61	18	66	40	2 bergs.
Do	do	61	30	66	43	Do.
Do	do	61	21	67	10	Small growler.
Do	do	61	24	67	12	Large berg.
Do	do	61	25	67	25	Do.
Do	do	61	32	67	29	Berg.
Do	do	61	40	67	18	Large berg and 3 growlers.
Do	do	61	31	67	26	Growler.
Do	do	61	40	67	20	Berg.
Do	do	61	42	67	29	Do.
Do	do	61	35	67	38	Do.
Do	do	61	33	67	39	Large berg.
Do	do	61	34	67	57	Do.
Do	do	61	37	68	02	2 large and 2 small bergs.
Do	do	61	40	68	05	Berg.
Do	do	61	40	68	05	30 small growlers.
Do	do	61	53	67	59	Large berg
Do	do	61	45	68	21	Do.
Do	do	61	48	68	18	Medium berg.
Do	do	61	47	68	23	Large berg.
Do	do	61	48	68	14	Berg.
Do	do	61	49	68	16	Do.
Do	do	61	53	68	28	Large berg.
Do	do	61	52	68	30	Do.
Do	do	61	49	68	33	Do.
Sept. 13	do	62	01	68	54	Berg.
Do	do	62	13	69	12	2 bergs.
Do	do	62	14	69	38	Large berg.
Do	do	62	19	70	27	Do.
Do	do	62	18	70	34	Berg.
Do	do	62	18	70	34	11 growlers.
Do	do	62	25	70	43	Medium berg.
Do	do	62	28	70	43	Large berg.
Do	do	62	32	71	40	Berg.
Do	do	62	35	72	07	Do.
Do	do	62	35	72	07	Small growler.
Do	do	62	41	73	18	Large berg.
Do	do	62	44	73	20	Berg.
Do	do	62	54	74	28	Do.
Sept. 14	USS Schmitt	50	03	52	55	Do.
Sept. 18	Hydro. Wash.	53	59	56	02	Do.
Sept. 19	do	56	36	58	58	Do.
Do	CanFlagLant	57	30	59	47	Do.
Sept. 20	do	58	40	61	20	Do.
Do	do	59	20	62	00	3 bergs.
Do	do	60	31	63	36	Berg.
Do	USS Edisto	62	21	72	23	2 bergs.
Sept. 21	do	58	20	60	20	Berg and several growlers.
Sept. 22	do	53	59	55	37	Berg.
Sept. 24	Hydro. Wash.	60	50	61	10	Do.
Do	do	60	43	63	48	Do.
Do	CanFlagLant	59	20	62	10	Do.
Do	USS Chukawan	53	48	55	51	Do.
Nov. 7	Empress of France	52	40	52	40	Do.
Do	do	52	36	52	39	Do.
Do	CanFlagLant	50	50	49	35	Do.
Nov. 10	CTF 24	50	34	50	12	Do.
Do	do	52	45	49	53	Do.
Nov. 11	Kittiwake	52	07	53	53	Medium berg.
Do	CTF 27	52	31	51	57	Berg.
Do	do	52	23	51	15	Do.
Do	Lismoria	54	42	52	41	Small berg.
Nov. 12	Sibley Park	52	06	53	32	Do
Do	Scythia	52	09	54	03	Do.
Do	Sibley Park	52	23	51	57	Large berg.
Do	CTF 27	51	42	55	21	Berg.
Do	do	55	10	52	39	Do.

Date	Name of vessel	North latitude		West longitude		Description
		°	′	°	′	
Nov. 13	CTF 27	51	47	53	50	Berg.
Do	do	53	40	54	06	Do.
Do	do	53	52	52	55	Do.
Do	do	53	27	53	50	Do.
Do	do	56	13	57	27	Do.
Do	do	53	40	54	00	Do.
Do	do	53	52	52	55	Do.
Do	Hydro, Wash.	56	03	57	27	Large berg.
Do	New York City	51	43	52	14	Berg.
Do	Hoyanger	51	56	53	57	Do.
Nov. 14	CTF 29	52	38	54	47	Large berg.
Do	do	54	10	54	29	Berg.
Do	CTF 24.1	54	13	53	44	Do.
Do	CTF 27	55	00	51	32	Do.
Do	do	52	33	54	30	Do.
Do	do	55	01	52	12	Do.
Do	do	55	00	51	32	Do.
Do	do	52	33	54	30	Do.
Nov. 15	CTF 24	51	29	53	32	Small berg.
Do	Comservron 2	52	23	54	37	Medium berg.
Dec. 19	Hydro, Wash.	63	12	33	55	Berg.
Do	Commercial Aircraft	63	36	33	12	Do.

OCEANOGRAPHY OF THE GRAND BANKS REGION AND LABRADOR SEA, 1948

BY FLOYD M. SOULE, H. H. CARTER, AND L. A. CHENEY[1]

Since the International Ice Patrol was discontinued in December 1941, because of the then existing war conditions and disruption to normal maritime commerce and practices in the North Atlantic, the availability of ships, equipment and personnel did not combine to permit the resumption of an oceanographic program until the season of 1948. For this season a 180-foot tender-class cutter, the USCGC *Evergreen*, was designated as the oceanographic vessel of the International Ice Patrol. A small laboratory was fitted out on the main deck and oceanographic winches, platforms, gallows frames, a rack for Nansen water bottles, and a bathythermograph winch were installed on the fantail. The laboratory was located nearly midway in a fore-and-aft direction, where the vibration was a minimum. Vibration on the *Evergreen* was excessive, partly from the engines, but principally associated with the propeller. As the vibration was so extreme, the location of the laboratory, in the area of least vibration, was the best compromise, in spite of the disadvantages of noise and excessively high temperatures arising from the laboratory's proximity to the engine room spaces and its location directly above the heating boiler and evaporator. Aside from the more rapid deterioration of instruments and equipment the unfavorable conditions in the laboratory probably had a direct effect in lowering the accuracy of measurements and computations. As the vibration on the fantail was the worst of all parts of the ship during the runs between stations, those thermometer readings made after leaving a station probably contain observational errors which are larger than they should be.

In spite of the serious nature of these shortcomings the really big question as to the suitability of the *Evergreen* for oceanographic work was whether, when hove to, in wind velocities ordinarily experienced, the wind drift of the vessel would produce wire angles too great for successful operation of the overboard gear. As a result of the 1948 experience gained with the *Evergreen*, it can be stated that with the ship hove to and dead in the water oceanographic stations can be worked successfully with wind velocities up to about 20 or 22 miles per hour at which the wire angle reaches the upper usable limit of about 45°. With wind velocities between 30 and 35 miles per hour the wire angle can be kept below 45° and reasonably constant by steaming into the wind at slow speed and keeping the wind just off the bow on the side from which the gear has been shot. With wind velocities below about 30 miles per hour difficulties are experienced in maintaining steerage way with speeds slow enough not to produce excessive wire angles from towing the gear. With winds above about 35 miles per hour difficulty is experienced in holding the ship's heading without the use of excessive speed to bring her back

[1] Contribution No. 467 of the Woods Hole Oceanographic Institution.

after the ship has fallen off and the wind is too far toward the beam. The limiting conditions mentioned above are not solely dependent on wind velocity but are also affected by the state of the sea, how well the directions of the wind and the sea correspond, and the direction and velocity of the surface current. To summarize, oceanographic stations can be and have been occupied under conditions of wind velocities in the ranges between 20 and 30 miles per hour and between 35 and 40 miles per hour with considerable difficulty and additional hazard to the equipment.

The *Evergreen* departed Woods Hole, Mass., for Argentia, Newfoundland, on 5 April. Enroute to Argentia a carboy of surface water was collected at 43° N., 59° W. This carboy was to serve as a working or substandard of salinity during the following oceanographic work. It was placed under an oil-seal and upon arrival on 9 April at Argentia a series of silver-nitrate titrations was run on the carboy water during the mornings and afternoons of the 9 and 10 of April and it was compared with Copenhagen standard water in the Wenner salinity bridge during the evening of the 10th of April. From these measurements a satisfactory preliminary value of the salinity of the carboy of substandard water was obtained for use during a dynamic topographic survey and, as the ship was in readiness, departure from Argentia was taken on the morning of the 11th of April.

During the run from Woods Hole to Argentia it was recognized that because of the excessive vibration and noise it would not be possible to determine the point of balance on the salinity bridge with sufficient precision. Therefore, at Argentia a workable solution was improvised by leading the bridge output through an isolation transformer and audio-amplifier.

The first current survey had been planned to cover the area along and immediately seaward of the southwestern and eastern margins of the Grand Banks. The work of the collection of the data began at station 3576 located at 43°34′ N., 51°30′ W., on 12 April. Station work proceeded slowly at first while inexperienced personnel were being instructed, and speeded up as facility was gained in performance of the various tasks. No serious mishap occurred until at station 3599, on 15 April, the starboard winch motor burned out as the winch began to haul in the deep series. The motor from the port winch was shifted to the starboard winch and was found to have a heavy ground in the series field. It was removed to the electrical shop and, as heavy weather had been predicted, the wire was hauled in by means of the capstan on 16 April while weather conditions were still favorable. During the several hours the wire had been down a screw had worked loose on one of the bottles, freeing the bottle from the wire clamp and resulting in the loss of the bottle and its attached reversing thermometers. No other damage was suffered aside from the kinking of the wire at about 1700 meters involved in getting the necessary turns around the capstan prior to hauling in. While dispatches were being exchanged relative to the replacement or repair

of the winch motors a more easterly position was obtained and with the decision to attempt to repair the winch motors at Argentia a bathythermograph section was run from 41°21′ N., 49°34′ W., to 44°00′ N., 51°46′ W. The BT section, crossing from the deep water south of the Tail of the Banks to the shoal water of the banks, it was hoped might shed additional light on the current structure.

Argentia was reached on the afternoon of 18 April and the resulting current map was delivered to Commander, International Ice Patrol, on the morning of the 19th. Fortunately the winch motors did not fail until after a sufficient number of stations had been occupied to permit delineation of the currents westward of the Tail of the Banks.

With winch motors repaired, the *Evergreen* departed Argentia on the morning of 5 May to begin a current survey of the area immediately seaward of the eastern slope of the Grand Banks. As the partial survey made in April indicated little likelihood of bergs reaching positions much west of the Tail of the Banks, this survey was to begin there and work northward to the latitude of Flemish Cap. The work of collection of data began on 6 May at station 3600 located at 43°20′ N., 50°13′ W. With quiet weather work progressed without incident until the afternoon of 9 May at station 3613. Prior to this station the wind drift had opposed current drift well enough to keep the wire angles within workable limits. At this station, however, the combination of these forces produced a wire angle too great (60°) to permit functioning of the equipment on the deep series. When the gear had been hauled in, the ship was brought into the wind and held there with only sufficient speed to give steerage way while the deep series was repeated. In hauling in this series the winch motor failed after the uppermost bottle had been retrieved. The remaining wire (1035m) and bottles were brought in with the capstan, and while proceeding to the next station the port winch was readied for operation.

The work at oceanographic stations was continued using the port winch until at station 3616, at 43°07′ N., 48°13′ W., on the evening of 10 May, the port winch motor burned out. The *Evergreen* continued to run BT sections along the courses of the proposed survey in the hope of getting current directions and lines of flow from identifying isobaths found in the completed dynamic topography by means of their associated isotherms at a depth of 100 meters and tracing these isotherms through the successive BT sections. In this area of known contrasts, probable cabbeling, sloping isopycnal surfaces and varying temperature-salinity relationships, it was realized that an isobathic thermal analysis would not yield accurate results; but it was considered that the resulting estimate of the general pattern of circulation would be superior to that deduced from surface temperatures alone. As soon as the dynamic topography had been completed a dispatch describing the circulation southeastward of the Grand Banks was sent to the cutter on patrol and the Commander, International Ice Patrol.

Operations were suspended for 25 hours from the early morning of the 14th until the early morning of the 15th while the *Evergreen* rode out a gale near 44° N., 45° W. No further sections were run into the shallow water of the Grand Banks and the survey was concluded with a section northward onto Flemish Cap. The last BT cast was made here on the afternoon of the 15th and the ship headed SSW while a rendezvous was arranged for the delivery of the current map to the *Mocoma*, the cutter on patrol. The map was completed on the evening of the 15th. Shortly after completion of the survey, wind and sea began to make up and heavy weather did not permit contact with the *Mocoma* until the morning of the 17th at 45°02′ N., 46°34′ W. After delivering the map, the *Evergreen* laid a course for Argentia, taking an additional BT section across the Labrador Current enroute and arriving at Argentia the morning of 19 May.

One of the winch motors had been damaged beyond the possibility of local repair. However, with the other motor repaired, the *Evergreen* departed Argentia on the morning of 8 June to make a current survey of the area immediately seaward of the eastern slope of the Grand Banks from about latitude 46° N., southward to the Tail of the Banks. The work of the collection of data began on the morning of 10 June at station 3617 located at 46°16′ N., 49°01′ W. Except for brief delays at stations 3635 and 3648, caused by kinks in the wire resulting from earlier capstan handling, work proceeded without incident until the early morning of the 18th when at station 3658 located at 41°58′ N., 47°46′ W., the winch motor failed while hauling in the deep series. The 1600 meters of wire and attached equipment were hauled in with the capstan and a course laid for Argentia, the resulting current map to be delivered to the *Mendota* there as she was scheduled to depart 21 June to relieve *Mocoma* as ice patrol vessel.

The ice season was rapidly drawing to a close and by the time the winch motor was repaired the *Evergreen* was ready to begin her post-season cruise. After leaving Argentia on the evening of 4 July, the first station of the post-season cruise, station 3659 at 50°00′ N., 49°00′ W., was reached on the morning of 6 July. From this point a series of three sections, forming the sides of a triangle, were run to Cape Bonavista, Newfoundland, thence to 47°24′ N., 50°01′ W., and thence to the beginning where the initial station was reoccupied as station 3688 on the morning of the 10th. From this point a course was laid to South Wolf Island, Labrador, from which a section was run across the Labrador Sea to Cape Farewell, Greenland, with the occupation of stations 3689 to 3711 inclusive between the afternoon of the 11th and the early morning of the 17th. During this run it was necessary to suspend operations from the morning of the 15th until the afternoon of the 16th while the *Evergreen* rode out a gale in the vicinity of 59° N., 45° W. From Cape Farewell the *Evergreen* proceeded to station 3712, located at 58°57′ N., 54°28′ W., which was the southern end of a longitudinal section run northward across Davis Strait

ridge to station 3746 located at 66°50′ N., 59°16′ W. This longitudinal section was interrupted at station 3715, located at 61°04′ N., 55°36′ W., on the evening of the 19th to replenish supplies at Narsarssuak, Greenland.

Leaving Narsarssuak on the morning of the 23d the longitudinal section was resumed at station 3716, located at 61°30′ N., 55°44′ W., on 24 July. From this station another diversion was made in order to run a section across the Labrador Current to Loks Land on the northern side of the entrance to Frobisher Bay. This section was completed at station 3725 on the afternoon of the 26th and the longitudinal section resumed at station 3726 at 62°09′ N., 56°05′ W., on the morning of the 27th. Another diversion from the longitudinal section was made beginning at station 3727, at 62°28′ N., 56°17′ W., to run a section across the West Greenland Current at Fyllas Bank near Godthaab, Greenland. This section was completed at station 3736 on the evening of the 28th. The longitudinal section was then resumed at station 3737 located at 63°04′ N., 56°36′ W., on the morning of the 29th, and concluded at station 3746 on 31 July. Beginning with station 3742 serious mechanical difficulties began to be experienced with the sonic sounding equipment which finally became beyond the capacity of the ship's force to repair about the same time that considerations of time and supplies forced the abandonment of further work and the *Evergreen* returned to port, reaching Argentia on 6 August to replenish, and Woods Hole, Mass., on 9 August to discharge oceanographic equipment.

During this activity 24 stations were occupied during the April survey, 17 during the May survey, and 42 during the June survey. At these 83 stations and the 30 stations occupied in running the triangle north of the Grand Banks on the post-season cruise the observations extended to about 1500 meters where the depth of water permitted, and the dynamic topography was referred to the 1000-decibar surface. The remaining 58 stations occupied during the post-season cruise extended from the surface to as near bottom as was practicable. At these stations the dynamic topography was referred to the 1500-decibar surface. The intended depths of observation were 0, 25, 50, 75, 100, 150, 200, 300, 400, 600, 800, 1,000 meters and thence by 500-meter intervals. Temperatures were measured by deep-sea reversing thermometers, principally of Richter & Wiese manufacture but including some made by Negretti & Zambra as well as G. & M. Manufacturing Co. During the late winter, prior to the beginning of field work, most of the thermometers had been calibrated by the Woods Hole Oceanographic Institution. Used in pairs, the thermometers were shifted periodically during the surveys so that most of the thermometers were each compared with several other thermometers. After applying the corrections resulting from the winter's calibration, the intercomparisons permitted the elimination of systematic differences and indicated the probable error of the measurements. A total of 1105 individual intercomparisons were made, giving a probable

difference between the corrected readings of a pair of thermometers of $\pm .018°$ C. It is considered then that the observed temperatures, which for the most part are the means of the corrected readings of a pair of thermometers, are accurate to about $\pm .01°$.

Nansen-type water bottles were used for the collection of water samples. As in previous years routine determinations of salinity were made by the electrical conductivity method using a Wenner salinity bridge. As the bridge had not been in use since the end of the 1941 season it was completely overhauled during February, 1948. The third or Wagner arm shunting the ordinary Wheatstone circuit had been made up of two fixed end-coils of about 500 ohms each between which was a 100-ohm slide-wire shunted by a fixed impedance of about 20 ohms. The slider of the slide-wire was connected to ground during its adjustment to balance in bringing the electrical center of the bridge to ground potential. In order to increase the range of the salinity samples which could be accommodated under this condition, the effective proportion of the third arm which would be varied by the slide-wire was increased by shunting each of the end coils with a 1000-ohm impedance and replacing the shunt across the slidewire with a 100-ohm impedance. This changed the overall impedance of the third arm from about 1019 ohms to about 718 ohms. The fixed impedance in the X-dial branch of the bridge was measured to be 200.1 ohms.

Fourteen samples of sea water, about evenly distributed over the range from 30.44 to 36.69‰ salinity were then compared in the bridge against Copenhagen standard water of the batch P_{15}, using a bridge X-dial reading of 50.040 as corresponding to the salinity of the standard water. The salinities of the fourteen samples of sea water were determined by silver-nitrate titration. A calibration curve of the form $S = A/(B + m) - C$ was then derived were S is the salinity in parts per thousand, m is the reading of the X-dials with the bridge balanced, and A, B, and C are constants of the bridge. B was taken as 200.1 from the measurement made with an external bridge. All combinations of the 14 sets of data gave 91 individual values for the constant C from the relationship,

$$C = \frac{(S_2m_2 - S_1m_1) - 200.1 \ (S_1 - S_2)}{(m_1 - m_2)}$$

The weighted mean of these values was derived by dividing the sum of the numerators by the sum of the denominators. This weighted mean was 3.961 which was used to substitute in the expression,

$$A = (S_1 + C) \quad (200.1 + m_1)$$

giving 14 values of A whose average was 9751.066. The resulting expression for the calibration curve, $S = 9751.066/(200.1 + m) - 3.961$, was then used to check the departure of the titration values from the curve. For the 14 points the departure averaged $- 0.002 \pm 0.023$‰.

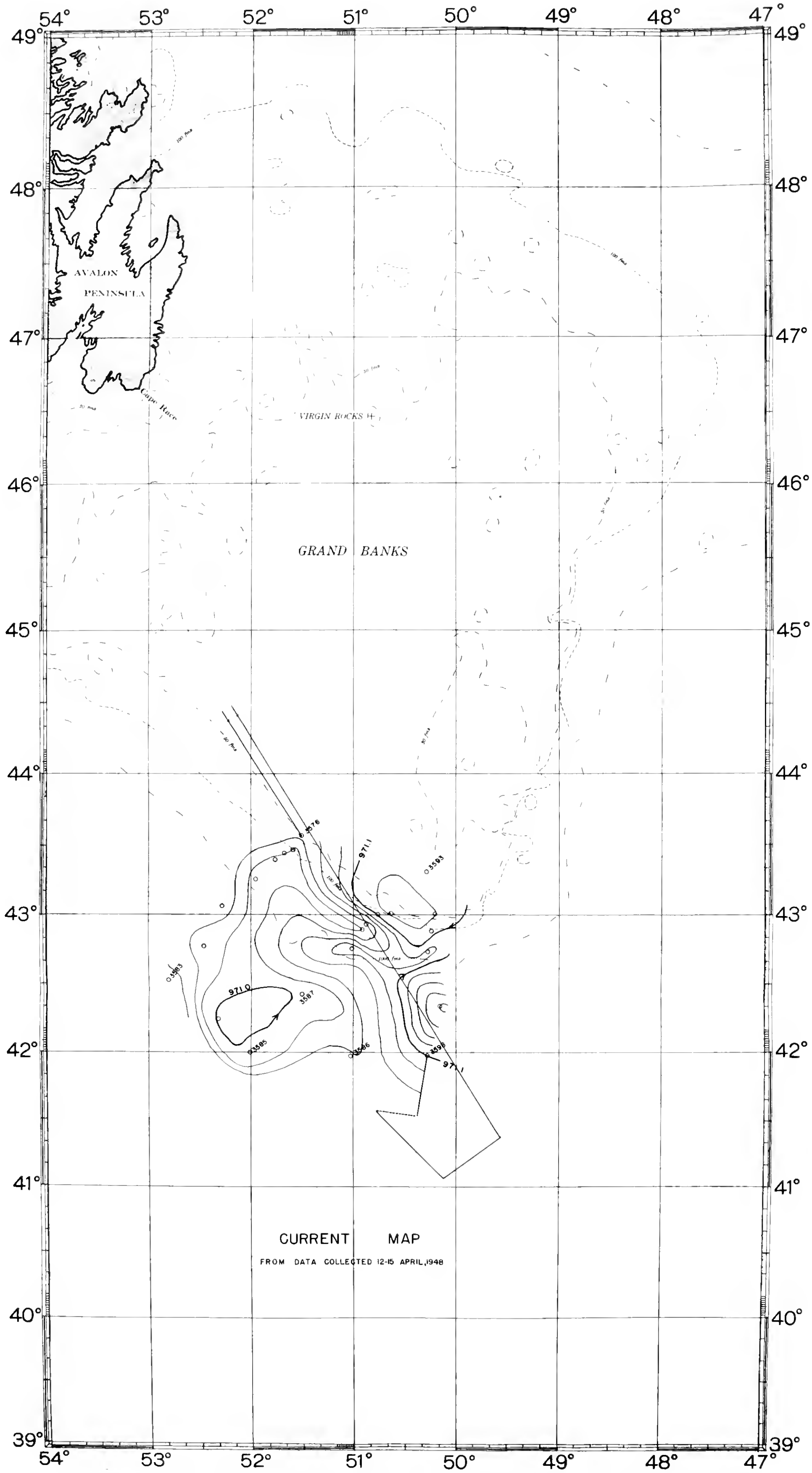

FIGURE 17.—Dynamic topography of the sea surface relative to the 1000-decibar surface from data collected 12–15 April 1948. Oceanographic station positions are indicated and the station numbers given at turning points.

The scatter of these points from the curve was considered to be fortuitous and the curve acceptable. The uncertainty of ± 0.023‰ is believed to be largely attributable to the titration measurements, since the precision of the bridge measurements is much better.

During each routine salinity run the bridge was standardized with water from the oil-sealed carboy of substandard water, using the tentative value of the dial reading corresponding to the substandard and standardizing about every 10th to 13th sample in each of the cells. At least once and usually twice during a run Copenhagen standard water was measured as an unknown. From these measurements of Copenhagen water the tentative value of the X-dial reading corresponding to the standard water was corrected for each survey. The initial carboy collected early in April was used during the April, May, and June surveys and on the post-season cruise through station 3715. The corrections, expressed in terms of salinity, were negligible for the April and May surveys and amounted to 0.01‰ for the June survey and post-season cruise through station 3715. For the remainder of the post-season cruise, Copenhagen standard water was used directly for standardizing the bridge. The tables show the corrected values of salinity. However, as the dynamic heights had already been computed and the topography delineated, the values of σ_t have not been recomputed but a flat correction of 0.01 applied. Likewise the tabulated dynamic heights have been decreased by 10 mm. where they are referred to the 1,000-decibar surface and by 14 mm. where 1,500 decibars is the reference surface. The dynamic topographic chart resulting from the June survey has not been corrected and hence shows topography which is 10 dynamic millimeters too high.

The oceanographic work was under the supervision of Oceanographer Floyd M. Soule assisted by Lt. (jg) Harry H. Carter during the season, and by Lt. Leroy A. Cheney during the post-season cruise. Calibration titrations were by the Woods Hole Oceanographic Institution and by Christopher R. Murray, yeoman, first class. Routine salinity bridge measurements were made by William B. Arndt, aerographer's mate, third class, and James F. Cizek, aerographer's mate, second class. Other assistants in the observational work were David H. Koch, aerographer's mate, third class, during the April and May surveys; Richard L. George, seaman first class, during the June survey; and Charles J. Albanese, chief quartermaster, during the post-season cruise.

The dynamic topographic chart resulting from the April survey is shown in figure 17. This survey showed the southwestern slope of the Grand Banks to be dominated by mixed water and slope water of the Gulf Stream system moving in from the south. The whorl centered near the eastern edge of the charted area at about 42°20′ N., showed a mixed layer about 200 meters in thickness with a temperature of about 12°.8 C. The area was completely free of true Labrador Current water, the lowest observed temperature being − 0°.28 C. From the course of the dynamic isobaths there seemed little likelihood of the currents providing trans-

portation for bergs westward of the 50th meridian should any reach the Tail of the Banks. Their only chance of further progress would be along the isobath of 971.1 dynamic meters which course would bring them into the shoal water of the banks at about 51° W., where they would probably strand in the vicinity of the slow clockwise whorl shown centered at about 43°10′ N., 50°30′ W.

Figure 18 shows the thermal structure of the upper layers along a section run from the southeastern edge of the surveyed area to the northern edge, from bathythermograph casts made at intervals of about 10 miles as the *Evergreen* crossed the area returning to port. The water over the banks, with temperatures between about 0.5° and 2.0° C. is seen at the left. Remnants of the Labrador Current are shown at the edge of the banks with a minimum of about − 0.5° and at the right is shown the mixed water with temperatures of 6° to 14°.

The current map resulting from the second survey is shown in figure 19. The dynamic topography shows very little of the Labrador Current passing westward of the Tail of the Banks, where it is confined to a band about 10 miles wide between 42°50′ N., and 43°00′ N. On the banks immediately northward of this is a slow clockwise eddy. At the southwestern corner of the charted area and again between longitudes 48° and 49° W., from 41° to 42°30′ N., is to be seen the northern edge of the Atlantic Current outlining an area of colder mixed water characterized by a series of at least three cyclonic eddies. The axis of the mixed water can be traced from about 41°10′ N., 48°44′ W., to 42°08′ N., 49°21′ W., to 43°15′ N., 48°26′ W. Northward of the area for which the dynamic topography is given, the direction of flow, estimated from the BT sections, is indicated by broken lines. These lines are not intended to indicate either current velocities or volume of flow. At latitude 45° N., the southward flowing current is made up of two bands, the major one of which is located outside the 1,000-fathom curve and extends eastward as far as the 48th meridian. The lowest temperatures found were in this band which is presumed to be the Labrador Current which is normally found inside the 1,000-fathom curve. Between the above-mentioned two bands of southward flowing water is water of higher temperature estimated to be moving in a cyclonic eddy. This slow moving eddy was probably derived from the intrusion of the Atlantic Current water whose salient is directed toward the Grand Banks at about latitude 44° N. If this were its origin it was cut off, prior to the date of the survey, by the Labrador Current flowing southward along the 48th meridian. This latter current forms the tongue of colder mixed water which has been indicated in figure 19 as extending east southeastward as far as 43° N., 46° W. Northward of latitude 45° N., the uncertainty of the indicated current estimates becomes greater but there is evidence of a cold water break-through to the southeastward in the vicinity of about 45°25′ N., 44°45′ N.

The six BT sections resulting from casts made during the May survey

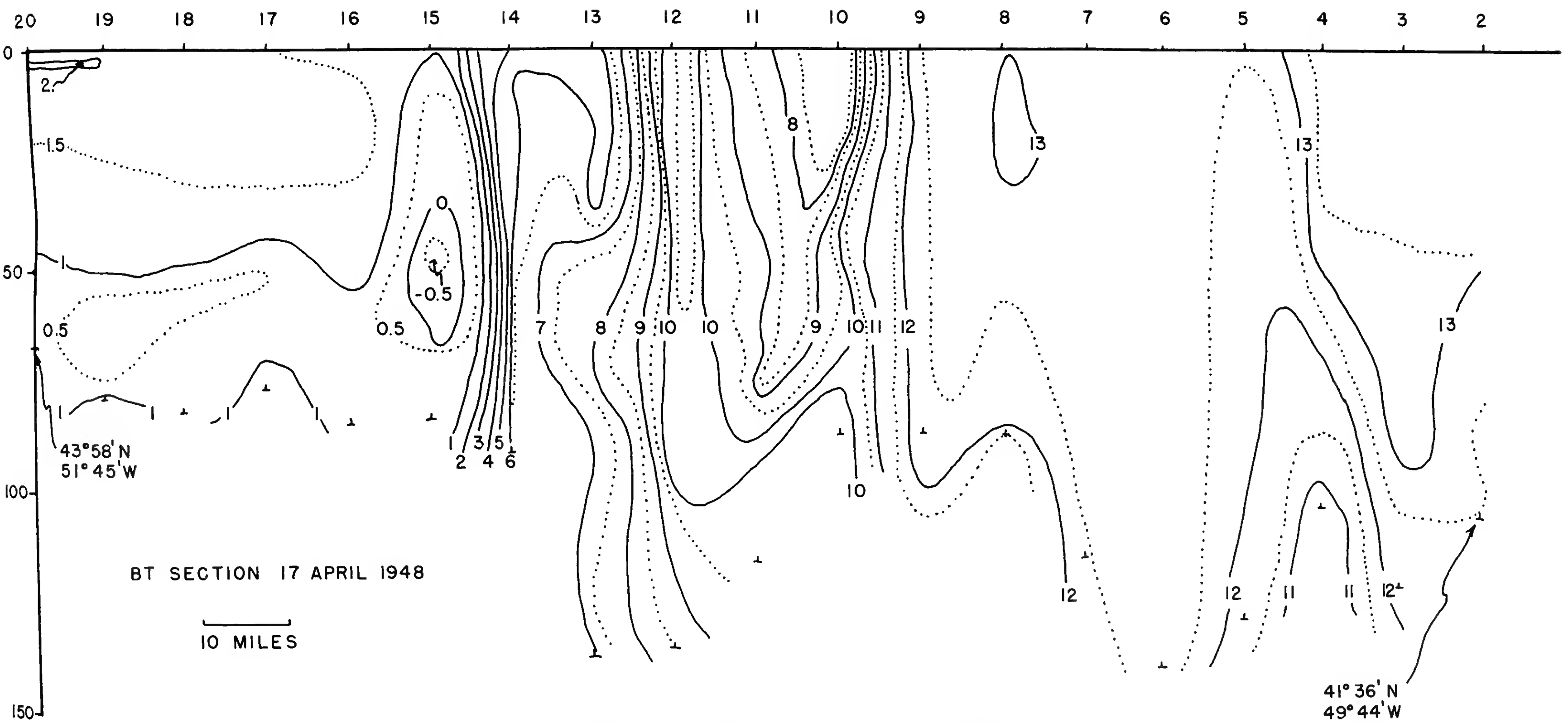

FIGURE 18.—Vertical temperature section from bathythermograph casts made 17 April 1948.

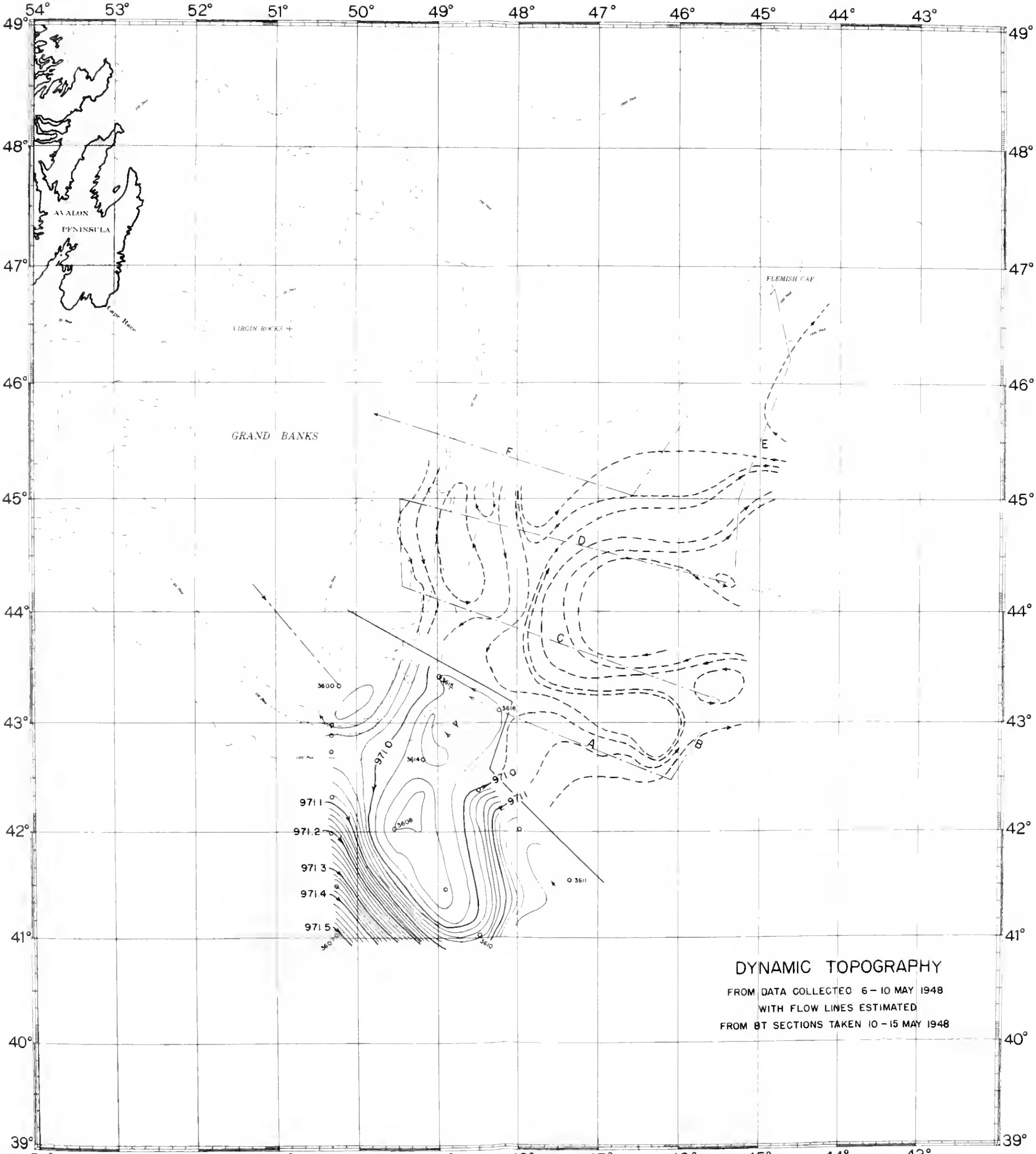

FIGURE 19.—Dynamic topography of the sea surface relative to the 1000-decibar surface from data collected 6–10 May 1948, with flow lines (broken) estimated from bathythermograph sections taken 10–15 May 1948. Oceanographic station positions are indicated and the station numbers given at turning points.

885002 O - 50 (Face p. 74) No. 2

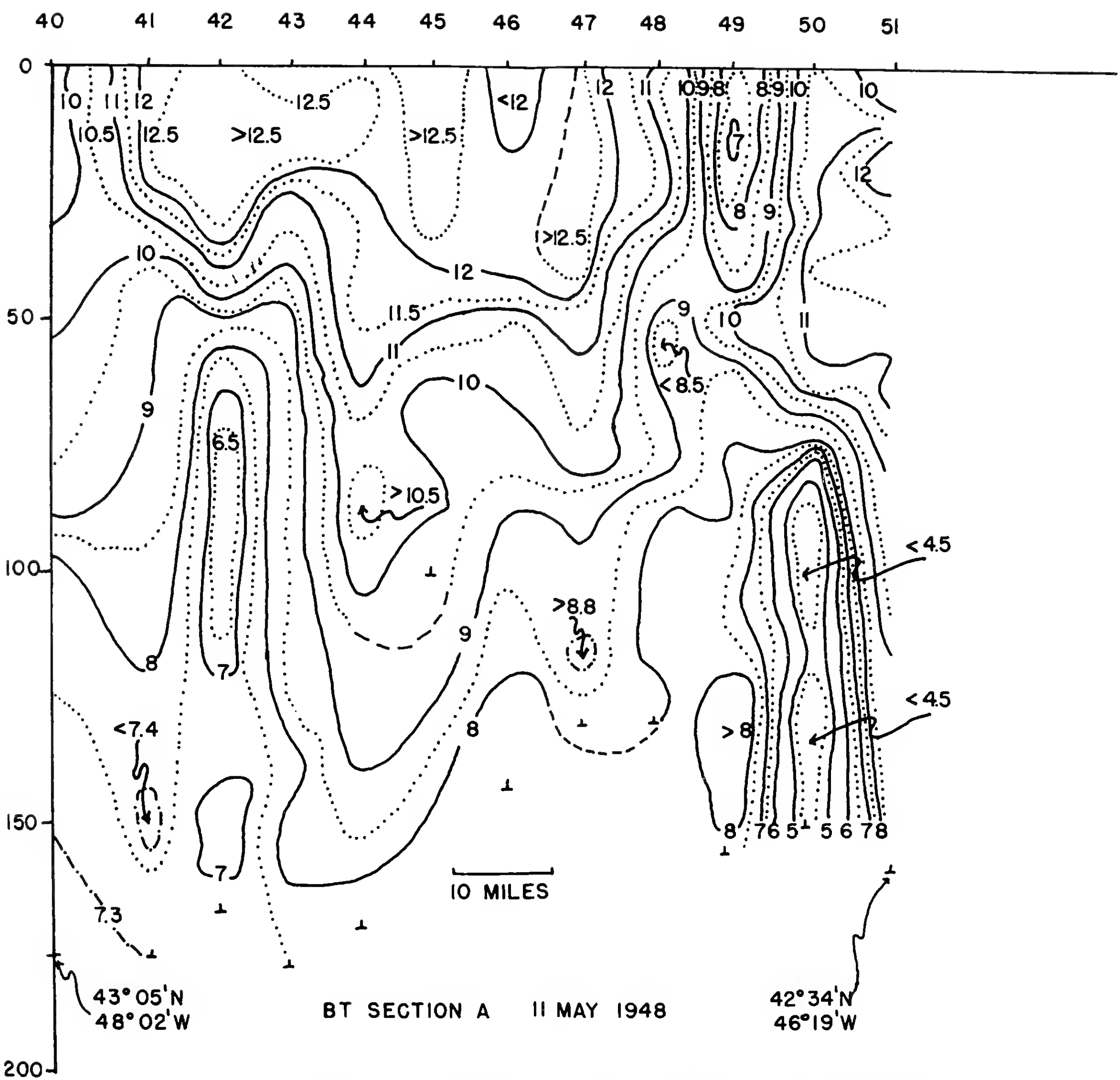

FIGURE 20.—Vertical temperature section A, from bathythermograph casts made 11 May 1948.

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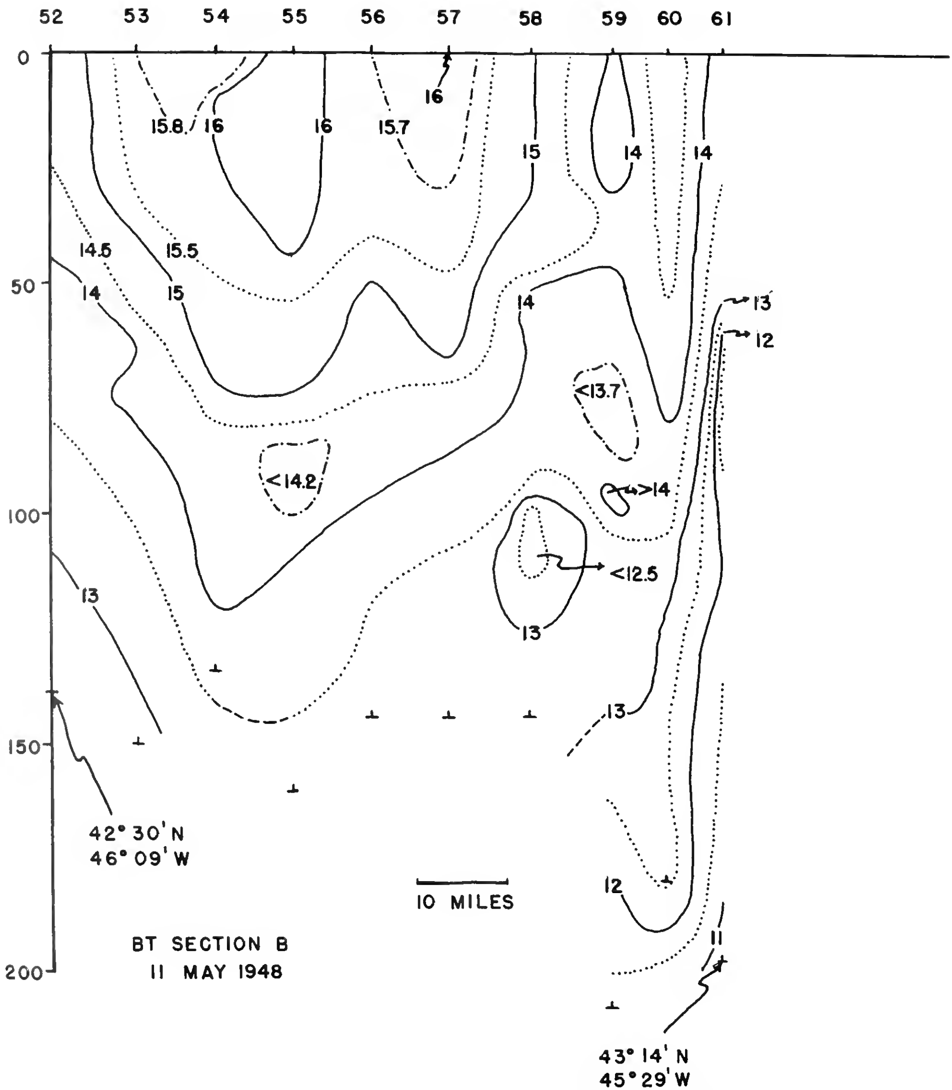

FIGURE 21.—Vertical temperature section B, from bathythermograph casts made 11 May 1948.

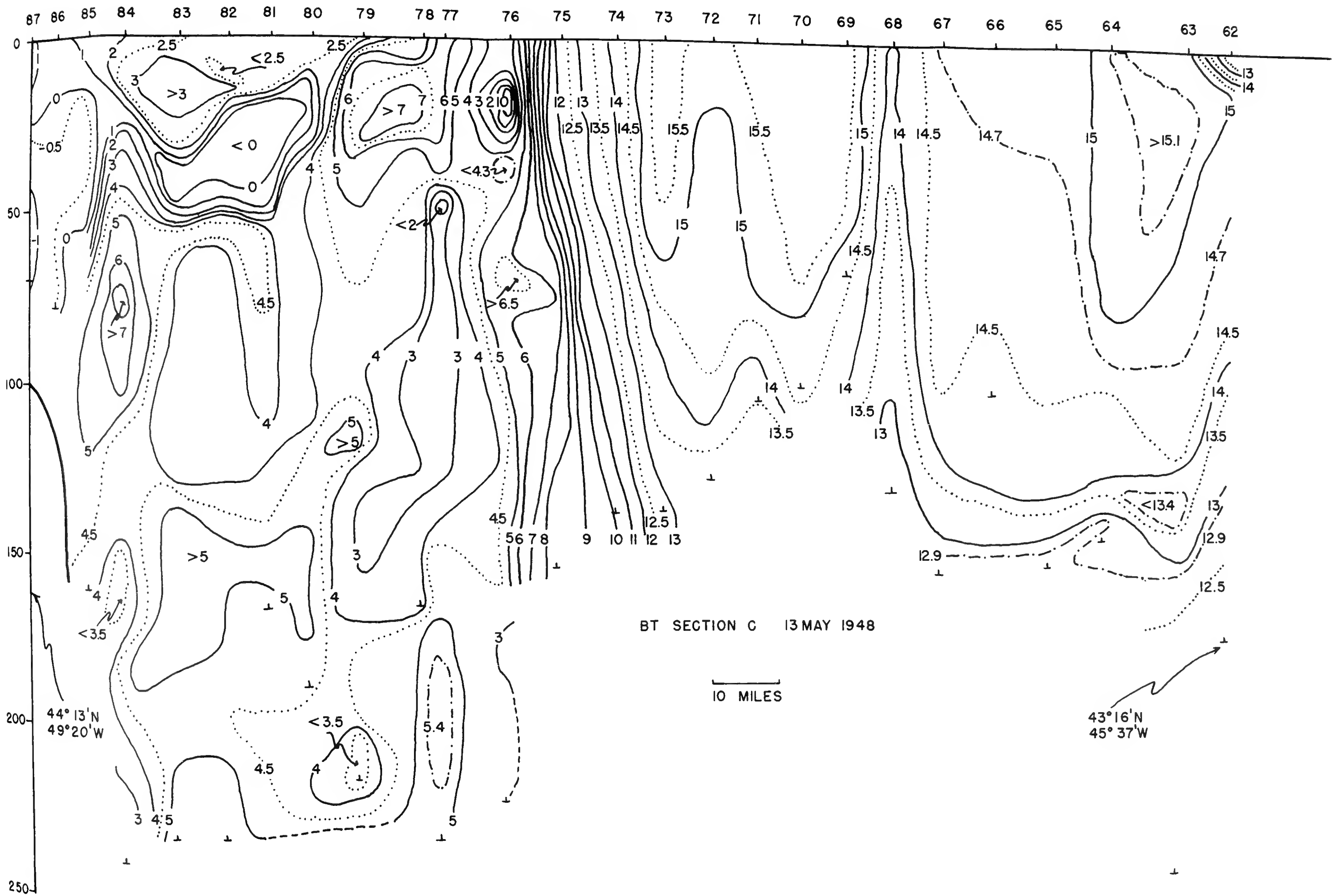

FIGURE 22.—Vertical temperature section C, from bathythermograph casts made 13 May 1948.

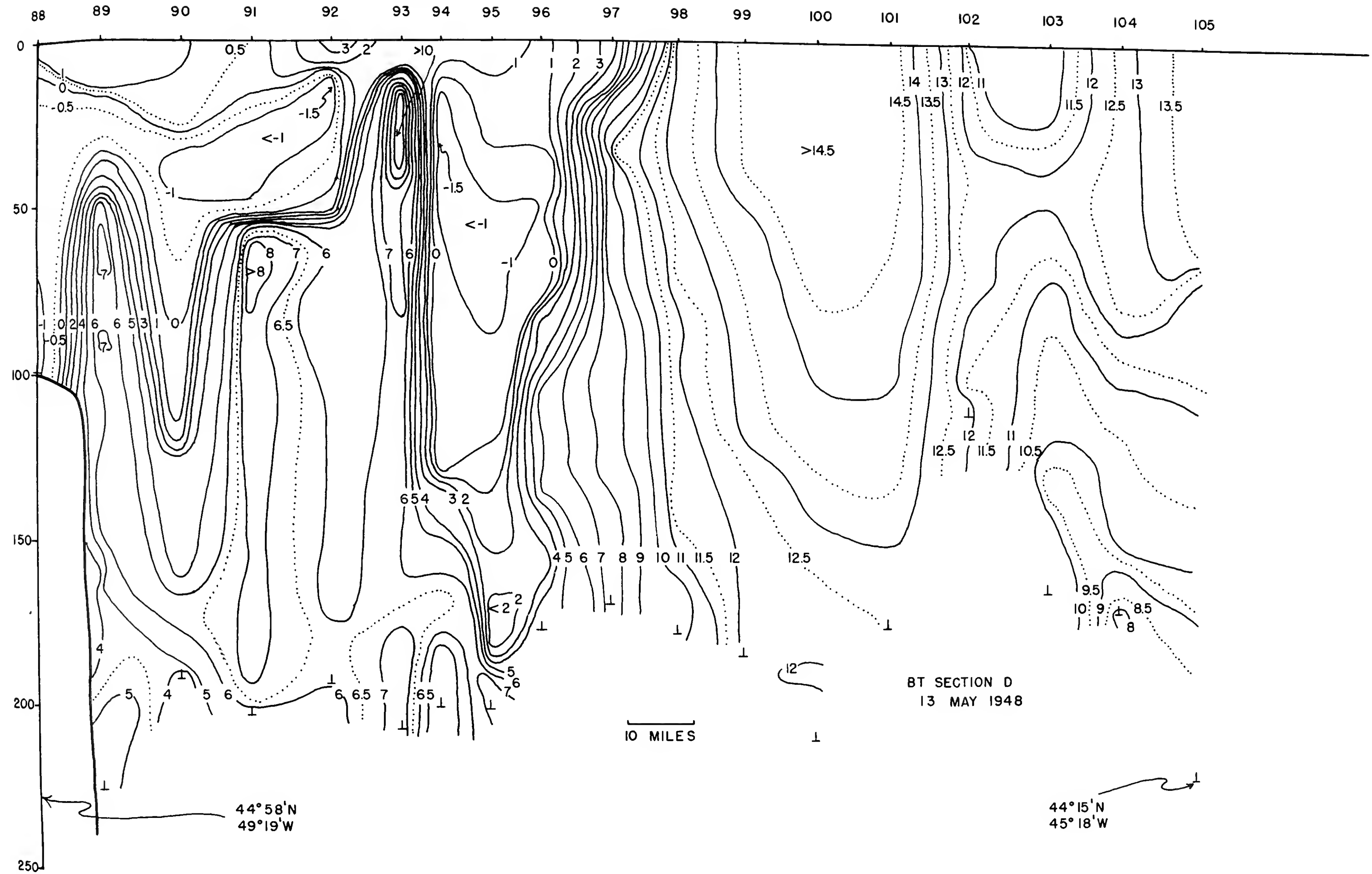

FIGURE 23.—Vertical temperature section D, from bathythermograph casts made 13 May 1948.

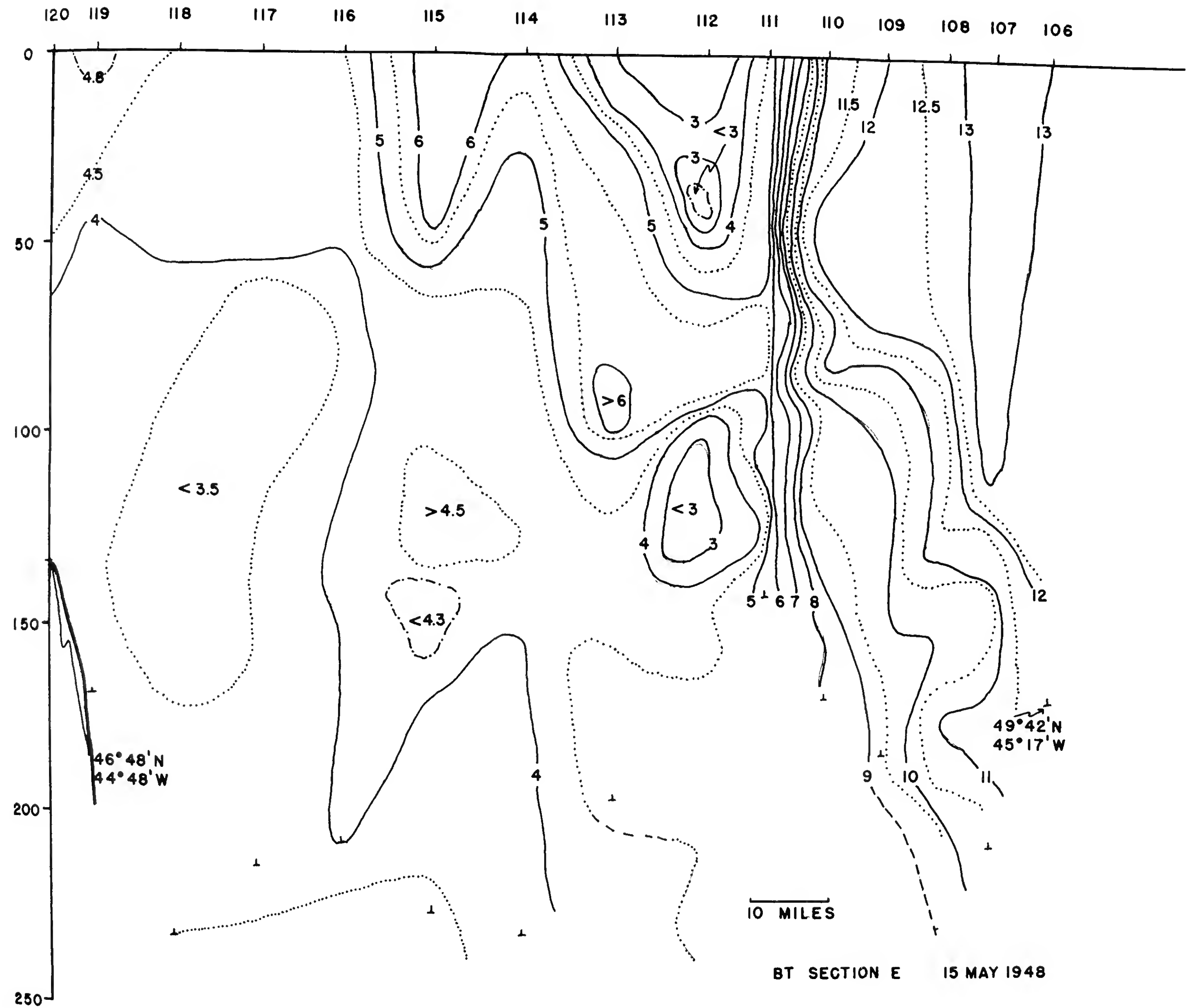

FIGURE 24.—Vertical temperature section E, from bathythermograph casts made 15 May 1948.

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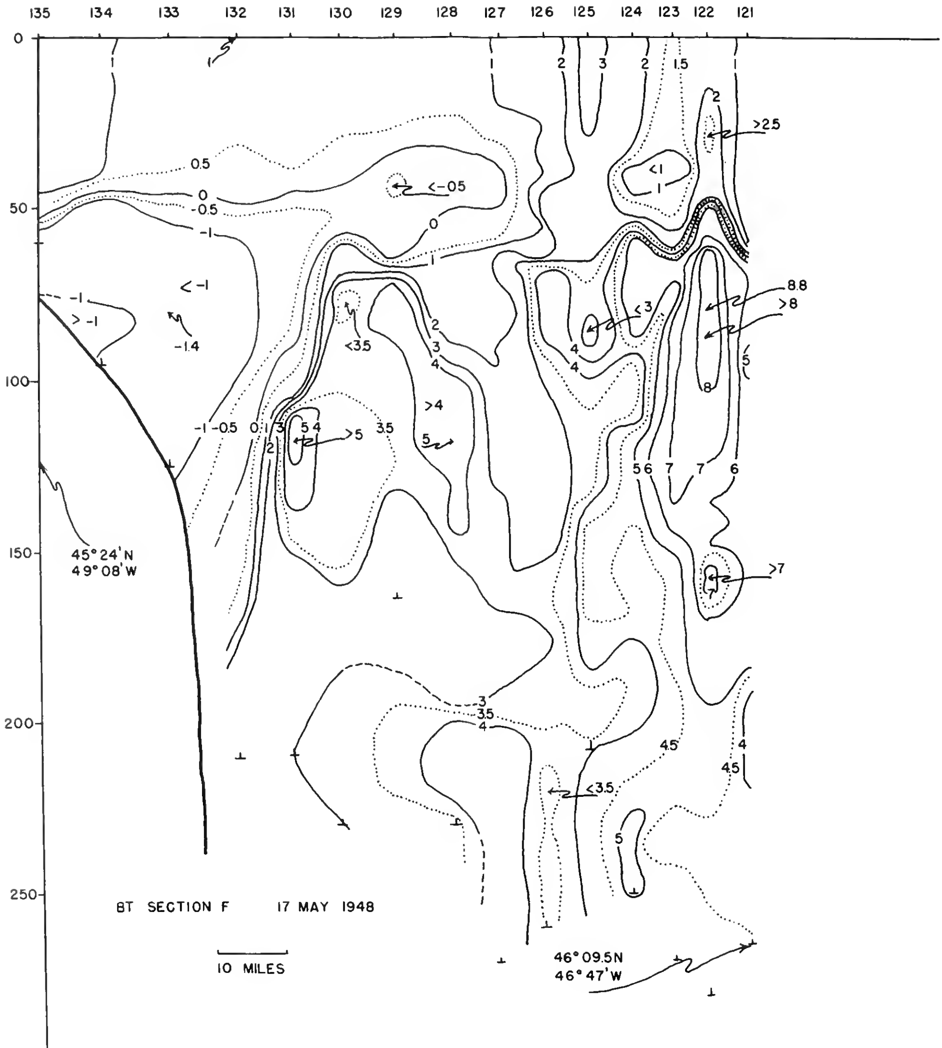

FIGURE 25.—Vertical temperature section F, from bathythermograph casts made 17 May 1948.

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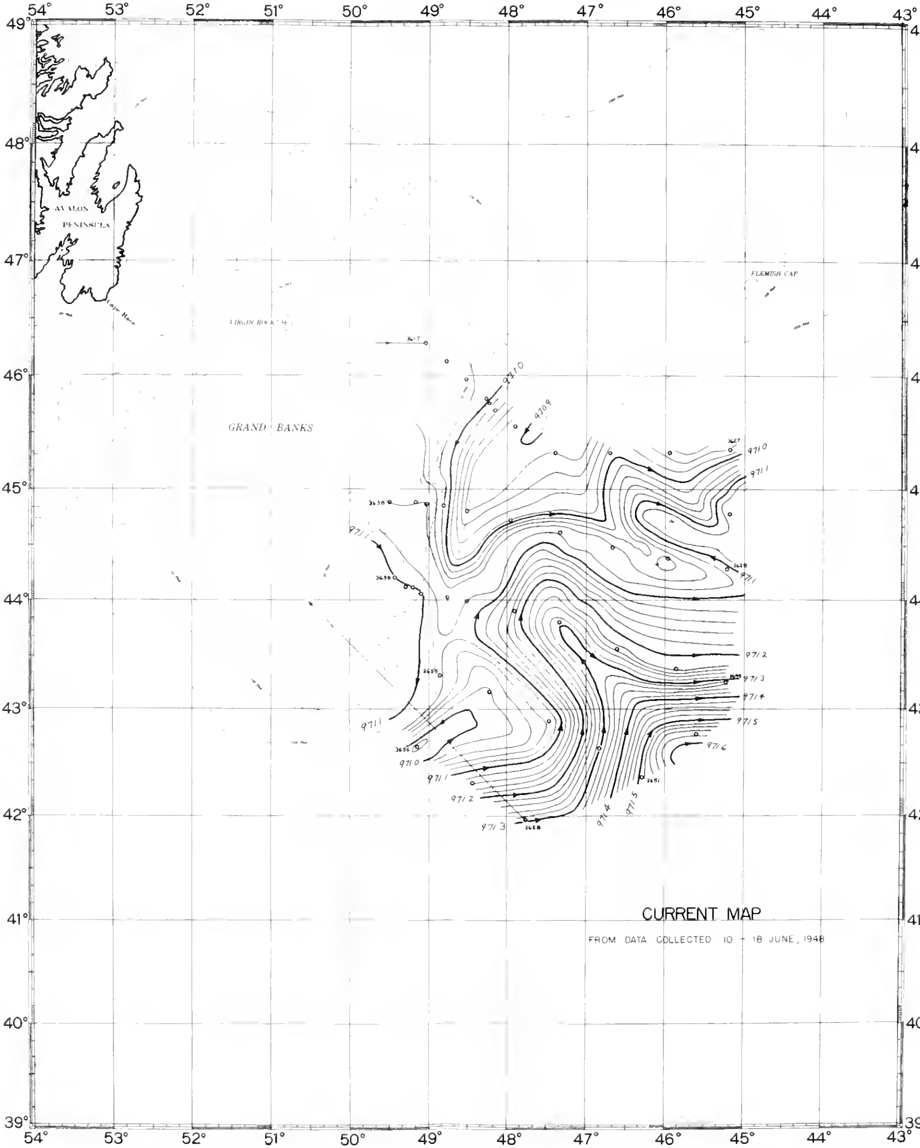

FIGURE 26.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 10–18 June 1948. Oceanographic station positions are indicated and the station numbers given at turning points.

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have been designated A through F and are presented as figures 20 to 25 inclusive. Their geographical locations have been indicated by corresponding letters on figure 19. It will be noted that section F does not show the marked division of the Labrador Current into the two branches shown in section D. As mentioned earlier in the narrative of the cruises, two gales passed through the area between the occupation of sections D and F. Although these gales may have had a tendency toward erasing the complicated temperature pattern found in section D it is considered that the mixing effect of these gales did not extend below about 50 meters and at deeper levels the general conditions shown in figures 23 and 25 existed simultaneously.

The dynamic topographic chart resulting from the June survey is shown in figure 26. From the practical standpoint of Ice Patrol, the most important feature shown in this chart is the diversion eastward of the Labrador Current north of latitude 44° N., by the persistent thrust of the Atlantic Current salient just southward of that latitude. In the area between the 100- and 1,000-fathom curves immediately northward of the 44th parallel the dynamic isobaths indicate weak residual currents and a situation where it would be possible but improbable that a shallow draft berg could continue southward to and beyond the Tail of the Banks if it experienced easterly winds and passed through the critical area just northward of the 44th parallel near the edge of the banks when the tidal currents were setting southwesterly. At the southwestern edge of the charted area there is to be seen the northern end of the colder mixed water eddy system found in this vicinity in the May survey. The vigor of the Atlantic Current border was greater during the June survey than during the May survey by inference from the greater westward extension of its thrust toward the banks. However, the Labrador Current still maintained sufficient strength to extend its effect eastward almost to the 45th meridian just northward of the 44th parallel. Experience has indicated that the persistence of such circulation patterns, once established, is relatively great and that the direction of the progress of eddies of mixed water between the Labrador and Atlantic Currents is similar to that of the latter. These generalities, combined with the seasonal decrease in the number of bergs immediately upstream available for transportation, led to the conclusion that the threat of ice endangering the U. S.-European steamer tracks would, for the rest of the season, be confined to such bergs as had already reached positions south of latitude 46°30′ N.

In past years, observations made in the Grand Banks region have been used to determine characteristic temperature-salinity relationships with the result that not only did the Labrador and Atlantic Currents emerge as water masses but the observations from the mixed water showed a small enough scatter from a characteristic T-S curve so that it seemingly approached a water mass. Unfortunately the numerous winch breakdowns experienced in 1948 so seriously limited the extent of the area

covered and the number of stations occupied in the Grand Banks region that the June survey is the only one approximating the coverage obtained in a typical pre-war survey. In dividing the 42 stations of the June survey into three groups representing the different water masses no group contains a large enough number of stations to form a very secure basis for the comparison of the 1948 season with other years. In 1940 the curve representing the T–S relationship in the Labrador Current water was displaced from that representing the 7-year average for the period 1934–40 toward higher temperature for a given salinity.[2] From the June survey of 1948, the T–S relationship in the Labrador Current was found to be similar to that found in 1940. The characteristics of the Atlantic Current water in 1948, as in 1940, were, temperature for temperature, somewhat fresher than the 7-year average. In the typical mixed water only 7 out of 12 stations followed the typical curve, the other five scattering from the typical curve to the curve for Atlantic Current water, and the typical curve in 1948 was similiar to that for the 7-year average.

The existence of a typical mixed water in this area has been interpreted to mean that the basic components, Labrador Current water and Atlantic Current water, mixed in remarkably constant ratios to form the water found at levels below 100 meters, whereas the mixture found above that level was described on a T–S plot by points which scattered widely between the characteristic curves of the two parent water masses. Whatever the system of controls governing the ratio of the components of the mixture, the presence of any considerable number of stations at which the T–S relationship is found to vary from that of the typical mixed water to that of Atlantic Current water would seem to indicate that those controls were not effective all along the margin of the Atlantic Current water. A plausible interpretation of the observations is that the usual situation which gives rise to the typical mixed water is one in which the mixing zone is narrow and active and the horizontal transition from one water mass to another is abrupt with the resulting low probability of a station being located in the mixing zone. The situation in which the mixing zone is broad and the transition gradual provides a good probability of stations being located in the mixing zone and the observations from those stations showing a mixture of variable ratios of the parent water masses. Thus in the light of this explanation, the transition from Labrador Current water to the typical mixed water was normally abrupt in 1948 and unusually gradual from the typical mixed water to Atlantic Current water.

In earlier bulletins of this series fluctuations in the Labrador Current in the Grand Banks region have been discussed with respect to certain sections which have been occupied repeatedly. These sections, called T, U, and W, are located as follows: Section T running southeasterly from about 46°20′ N., 49°00′ W.; section U extending east and

[2] See U. S. Coast Guard Bull. No. 30, p. 46.

west at about the 45th parallel; and section W running south off the Grand Banks at about the 50th meridian. In 1948 sections T and U were occupied once each during the June survey; and section W was occupied twice, once each during the April and May surveys. Beginning with 1934 there have been 81 occupations of these sections distributed amongst the three sections T, U and W 27, 29 and 25 respectively; and according to season within the months centered on 1 April, 1 May, 1 June and 1 July there have been 17, 25, 24 and 15 occupations respectively. It has been emphasized that the variations in the Labrador Current from year to year are so great that the seasonal variations will be difficult to derive when it is remembered that the sections seldom have been occupied at regular intervals throughout a complete ice season. The entire ice season represents only about a quarter to a third of the year and so no attempt has been made to derive the annual cycle by the use of Fourier series. There is reason to suspect that maxima and minima in volume of flow occur near the beginning and end of the ice season, and minima and maxima mean temperatures occur at similar times of the year. The 27 values for section T and the 29 values for section U were used to develop second degree curvilinear regression equations to define the time and magnitude of the normal minima in volume of flow past sections T and U and the normal maximum mean temperature at section T. The resulting computed times of the occurrence of the minima in volume of flow at sections T and U were 15 June and 1 June respectively. These dates are surprisingly early.

The great variations occurring from year to year, the lack of data for complete ice seasons for the years represented, and the brief span of years covered by the data have led to the decision to postpone further attempts to arrive at curvilinear seasonal normal curves until a larger series of observations is available. In the meantime straight line relationships have been used to represent the seasonal normals. On the basis of the 81 occupations so far available these lines are defined in the following by giving the value at 15 May, the middle of the 4-month season, and the rate of change per month. Volume of flow has been expressed in units of 1,000,000 cubic meters per second and temperatures in degrees centigrade:

	Volume of flow	Mean temperature
Section T	3.43 decreasing 0.67 per mo.	2.22 increasing 0.10 per mo.
Section U	5.40 decreasing 0.56 per mo.	2.15 increasing 0.14 per mo.
Section W	3.61 decreasing 0.26 per mo.	2.62 increasing 0.16 per mo.

Referred to these normals the occupation of section W during the 1948 April survey (0.32) showed the Labrador Current to be 3.57 million cubic meters per second below normal in volume of flow with a mean temperature of 3.18° C. which was 0.7° warmer than normal. During

the May survey section W showed similar characteristics with the volume of flow of 0.44 being 3.26 million cubic meters per second below normal and a mean temperature of 5.25° C. which was 2.65° above normal. During the June survey the Labrador Current at section T was found to have a volume of flow of 1.19 million cubic meters per second or 1.67 below normal. Section U, also occupied during the June survey, showed a volume of flow of 3.47 million cubic meters per second, which was 1.42 below normal, and the mean temperature, 2.31° C., was 0.03° above normal.

Thus each of the four occupations in 1948 showed a smaller than normal volume of flow of the Labrador Current. The almost complete absence of the Labrador Current at section W is in accord with the unusually high mean temperatures found at that section. The location of the boundary zone between the Labrador Current and the Atlantic Current depends on their relative strengths. The extra northerly location of this boundary at section W, therefore, does not reveal whether the former was weaker than usual or the latter unusually strong. However, the smaller than normal volumes of flow of the Labrador Current past sections U and T give more reliable evidence that this weakness was a major determining factor in the location of the boundary zone. It is of interest to note that the forecast was for a smaller than normal number of bergs during the 1948 season. As the forecast formulae are based on barometric pressure distribution they predict fluctuations in the wind-driven current system which provides transportation for the bergs without direct consideration of the number of bergs to be transported. Thus a forecast of a small number of bergs is, in effect, a forecast of a weak Labrador Current. The subnormal volume of flow found at section T is in accord with the berg forecast and indicates that the greater than average number of bergs which actually crossed the 48th parallel was not the result of better transportation facilities and that the reason must be sought either in an abnormal supply of bergs available for transportation or a lower than usual mortality rate of the bergs during their journey.

In this connection it is of further interest to note that the mean temperature of the Labrador Current at Section T was 0.68° colder than normal. The Labrador Current is made up of a frigid portion located over the continental shelf and originating in the Baffinland Current, and a warmer portion located over and seaward of the continental slope and originating in the West Greenland Current. The lower than normal mean temperature of the Labrador Current at section T suggests that the deficiency in volume of flow was largely the result of a deficiency in the West Greenland Current component. It is possible that this reduction in the tempering effect of the West Greenland Current component may have had an important effect in decreasing the berg mortality.

Northward of the Grand Banks the Labrador Current divides into a western and usually minor branch which flows southward along the

Avalon Peninsula of Newfoundland, and an eastern and usually major branch which flows southward along the eastern slope of the Grand Banks. Bergs carried southward in the western branch usually do not get very far south of Cape Race and thus endanger only track F, but bergs following the eastern branch may threaten the safety of traffic following all tracks. The division of bergs between these two branches, then, has an important bearing on the degree of potential danger represented by any given number of bergs approaching this region from the north. It would seem, therefore, that a study of the characteristics of the Labrador Current in the vicinity of the branch point gives promise of information which will help us to understand the movements of ice in the critical area and may lead to methods of medium and short range forecasting of the ice hazard to each of the tracks.

In 1948 a beginning was made in the study of conditions in the vicinity of this branch point. Three sections forming the sides of a triangle, intended to include the branch point, were occupied on the post-season cruise. The northern side included the sum of both branches, the southwestern side included the western branch and the southeastern side the eastern branch. Figures 27 and 28 show the resulting dynamic topography of the sea-surface and the 100-decibar surface respectively, relative

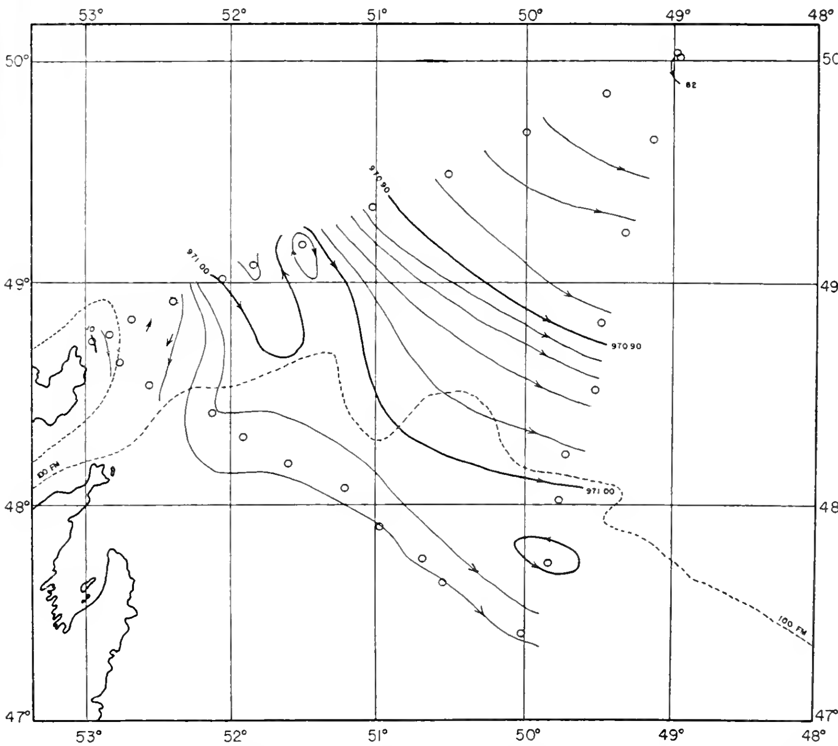

FIGURE 27.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 6–10 July 1948.

to the 1,000-decibar surface. As this area is one from which we have little information compared to other areas of interest to the ice patrol

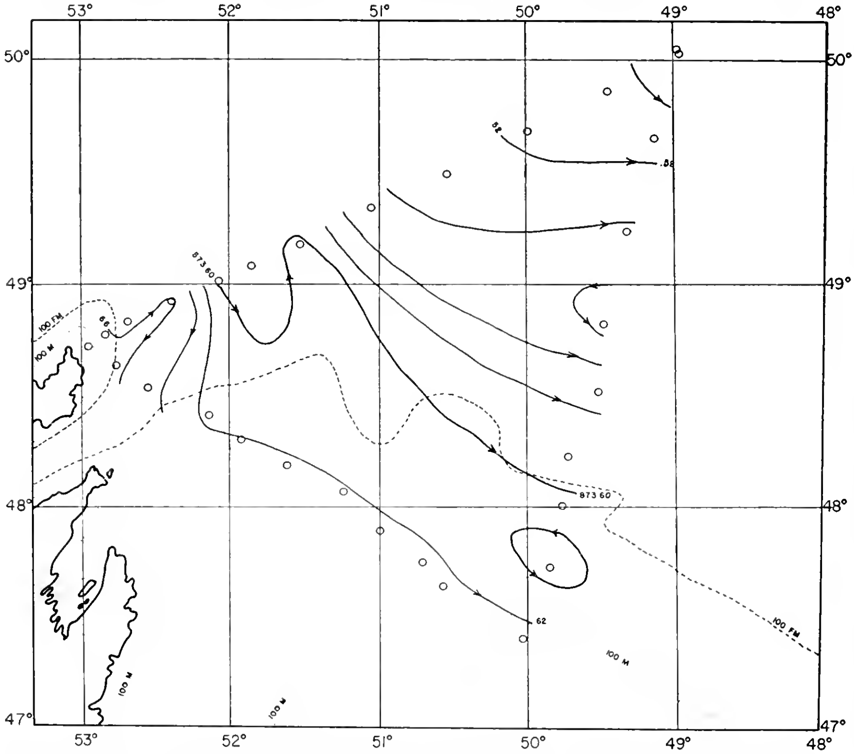

FIGURE 28.—Dynamic topography of the 100-decibar surface relative to the 1,000-decibar surface from data collected 6–10 July 1948.

there are a number of questions which must be answered before measurements made in the area can be used with the hope of deducing consequent berg behavior. One of the first questions arising is whether the current pattern at the sea surface is sufficiently similar to that at other levels down to about 150 or 200 meters, so that the general picture of circulation at one of those levels may be taken as representative of the net effect of water movements here on bergs which are of sufficient size to survive the journey from this region to positions of potential hazard to transatlantic traffic farther south. A comparison of figures 27 and 28 shows that during the period of these observations, the circulation pattern at the two levels was much the same. The circulation pictured indicates that any southward-bound bergs crossing the 49th parallel east of about 52°05′ W., would continue in the eastern branch of the Labrador Current, and those crossing this parallel west of about 52°20′ W., would follow the western branch of the current along the Avalon Peninsula, and those crossing 49° N., at intermediate longitudes would probably strand on the northern slopes of the Grand Banks.

Velocity and temperature profiles were constructed for each of the three sections and volume of flow and mean temperature computed. The resulting values, expressed in millions of cubic meters per second, and degrees centigrade respectively are as follows; northern section 3.35 and 1.60; southwestern section 0.73 and 0.07; southeastern section 2.55 and 2.75. Thus about 78% of the Labrador Current followed the eastern branch. If bergs may be looked upon as drift bottles indicating the direction and branching of the currents their observed behavior over a number of years shows that usually during the early part of the season most of the current in the eastern branch flows southward through the valley between the Grand Banks and Flemish Cap and that little or no recurving to the east and north occurs between the branch point and the latitude of Flemish Cap. As the season advances, however, an increasing amount of such a diversion takes place and a successively larger proportion of the bergs passing south of the branch point in the eastern branch move off to the eastward north of Flemish Cap. It must be remembered, of course, that toward the end of the season, wastage and erosion of the bergs means that a larger proportion of the bergs passing the 49th parallel are "sailors" than is the case during the earlier months of the season. Never the less the seasonal increase in the number of drift tracks of bergs diverting eastward north of Flemish Cap is so marked as to lead to the inference that some seasonal eastward branching of the current occurs in this region and may account for some of the seasonal decrease in the volume of flow of the Labrador Current noted at sections farther south. The time interval of about 1 month which elapsed between the last occupation of section T when a volume of flow of 1.19 million cubic meters per second was found at that section, and the occupation of the triangle in July when 2.55 million cubic meters per second represented the volume of flow of the eastern branch, prevents any precise deductions from these observations as to the proportion of such a diversion north of Flemish Cap.

There is no assurance that the northeastern corner of the triangle, located at 50° N., 49° W., does not extend part way into a counter-clockwise eddy offshore of and possibly associated with the eastward diversion north of Flemish Cap. That this may have been the case is suggested by the fact that the volume of flow past the northern section of the triangle is slightly greater than the volume of flow of 3.01 million cubic meters per second of the Labrador Current past the South Wolf Island section a few days later. Immediately following the occupation of the triangle a section was run from South Wolf Island, Labrador, to Cape Farewell, Greenland. This volume of flow and a mean temperature of 2.21° may be compared with mean values of earlier occupations of this section during the period from 1928 to 1941 of 4.0 million cubic meters per second and 2.5°. From this, if the earlier values may be considered normal, it will be seen that both the volume of flow and the mean temperature of the Labrador Current were subnormal in July 1948 as was

the case in the Grand Banks region during the season.

Figure 29 shows the temperature distribution found in the South Wolf Island-Cape Farewell section in 1948. The Labrador Current may be recognized in the cold water core over the shelf and the warmer offshore portion over the slope. On the Greenland side the cold inshore part of the West Greenland Current does not extend very far seaward but the warm Irminger Current component has temperatures which are mostly less than 6°. Although the area in which the temperatures are between 4° and 5° extends seaward beyond station 3705, this warm water offshore is considered to be associated with the edge of the Atlantic Current rather than with the Irminger Current component of the West Greenland Current. This unusual situation will be discussed in greater detail in connection with the circulation inferred from volumes of flow past the various sections.

This is the first occupation of the South Wolf Island-Cape Farewell section since the 1941 observations. The intermediate water of the Labrador Sea in the summer time showed a characteristic temperature inversion with minimum values which were consistently in the neighborhood of 3.17° over the years 1934 to 1939. In 1940 the cross-sectional area of this temperature minimum was much smaller and had a value nearly 0.1° warmer than previously. In 1941 the temperature increase was maintained and the temperature inversion was not present. In 1948 the temperature inversion is present, but taking the section as a whole the area occupied by the temperature minimum is small and less noticeable than a deeper temperature maximum. During the 1948 occupation, the lowest temperature observed at depths between 500 and 1,500 meters was 3.35° C. Whether this may be taken as an indication that the pre-war change in thermal characteristics of the intermediate water was still present, or considered as a northward encroachment of the borders of the Atlantic Current, the end result is the same in implying a reduction in area of that part of the Labrador Sea which may be a wintertime source region for bottom water of the North Atlantic.

The locations and numbers of the stations occupied in the Labrador Sea and Davis Strait during the 1948 post-season cruise are shown in figure 30 to facilitate the following discussion in which reference is made to station numbers and sections. Figure 31 shows the dynamic topography of the sea surface relative to the 1,500-decibar surface derived from the stations shown in figure 30. Because of the considerable distances separating the sections it is not possible to give a detailed picture of the circulation, but the major features of the current pattern form a guide to the construction and interpretation of the vertical sections of velocity. As noted above, the warm water centered around station 3705 is associated with the outer edge of the Atlantic Current rather than with the Irminger Current component of the West Greenland Current and the offshore boundary of the West Greenland Current is located in the vicinity of station 3706. Consideration of the vertical section of

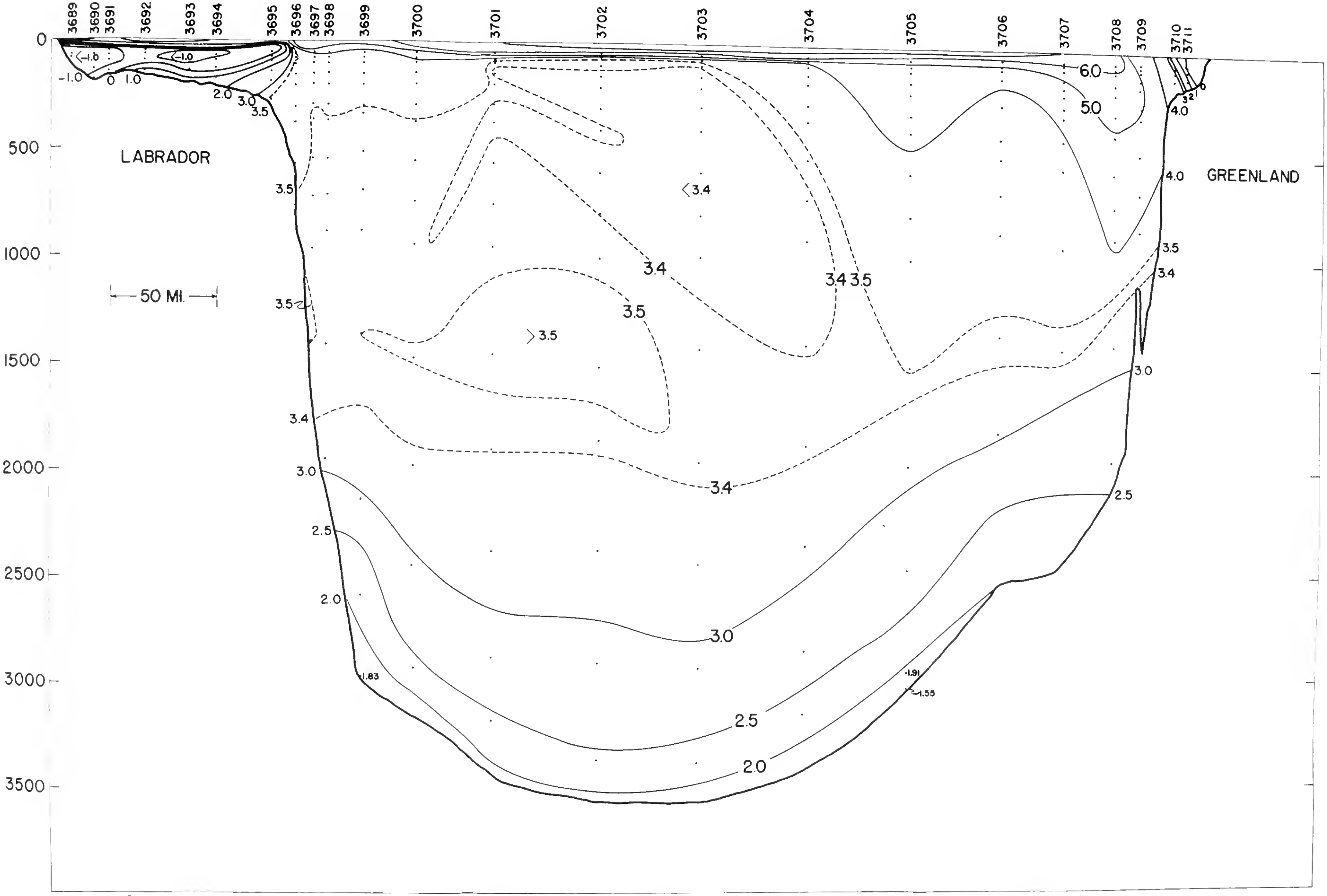

FIGURE 29.—Temperature distribution between South Wolf Island, Labrador, and Cape Farewell, Greenland, 11–17 July 1948.

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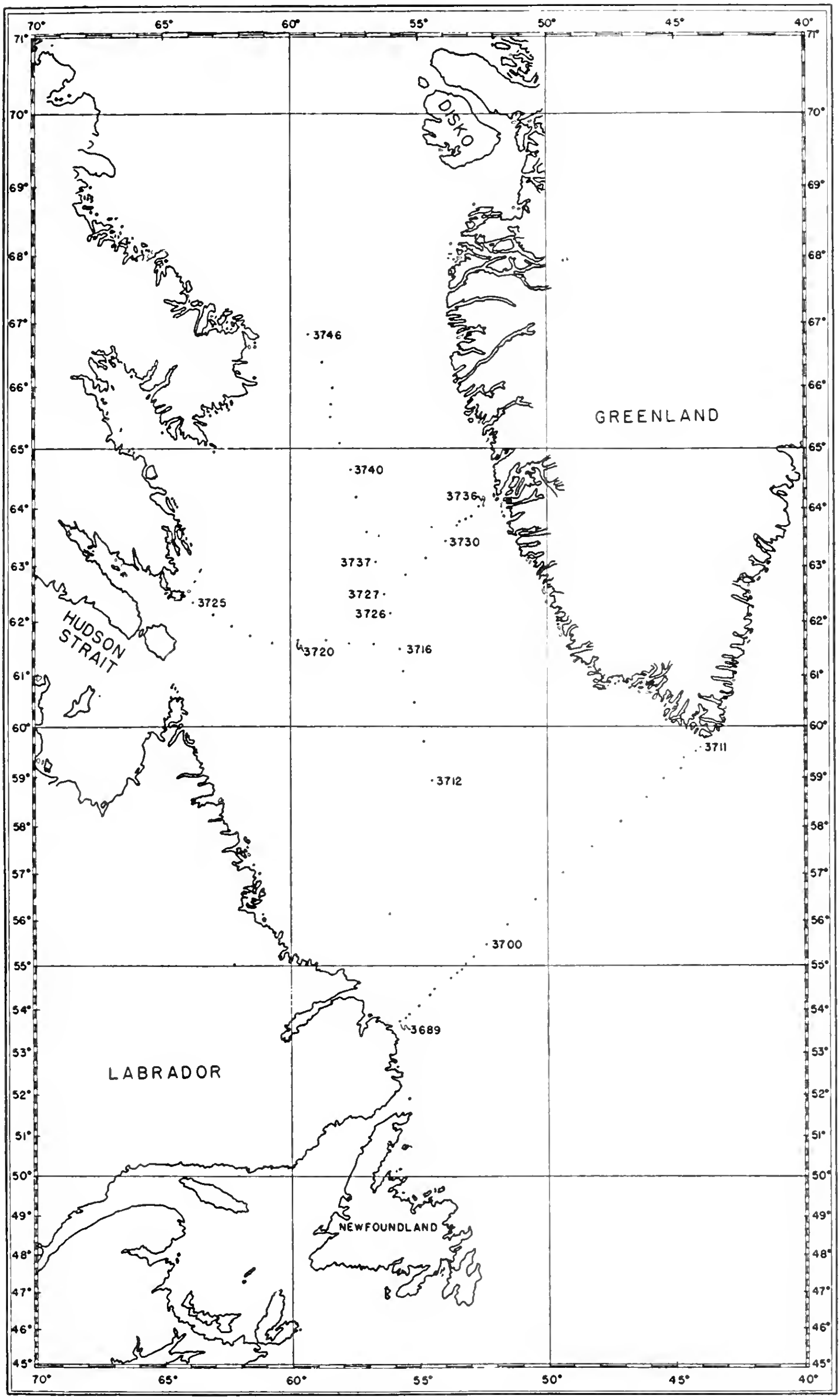

FIGURE 30.—Location of oceanographic stations occupied in the Labrador Sea and Davis Strait during the 1948 post-season cruise.

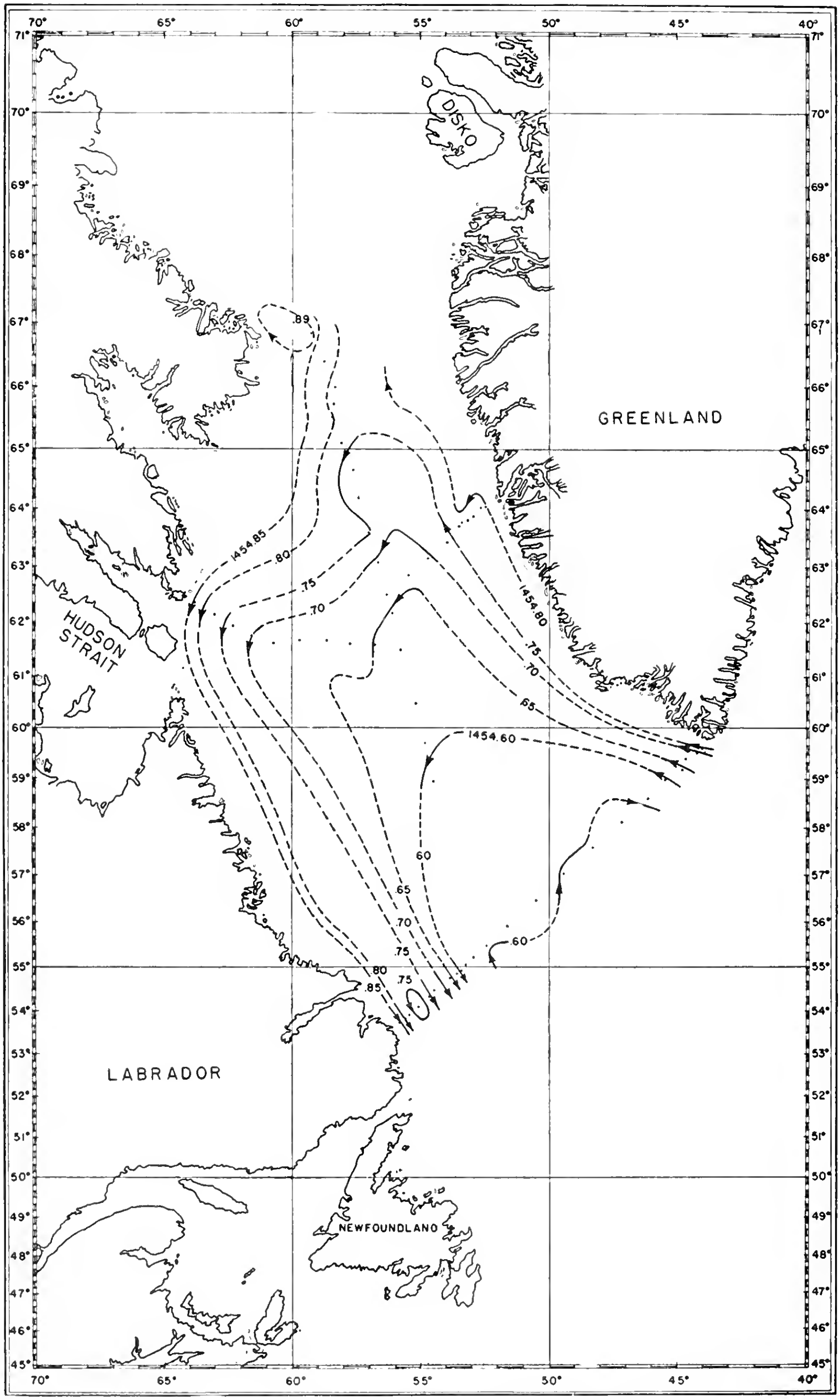

FIGURE 31.—Dynamic topography of the sea-surface relative to the 1,500-decibar surface from data collected 11–31 July 1948.

velocity of the Cape Farewell section combined with numerical computation shows that this current here has a net volume of flow in a northwesterly direction of 1.52 million cu. m./sec. with a mean temperature of 3.93° C. This is after subtraction of a southeasterly flowing subsurface band which has a volume of flow of 1.59 million cu. m./sec. and a mean temperature of 3.67° C. As this band of counter current hugs the continental slope it is presumed to be composed largely of water which crosses the section in a northwesterly direction adjacent and offshore of it at similar or somewhat higher levels.

Farther north, at the section extending from station 3727 across Fyllas Bank to station 3736, we find a similar band of southerly current beneath the surface. Here, however, the southerly current is somewhat offshore of the continental slope and is presumed to be made up partly of a closed eddy inshore of the counter current and partly of north-flowing water crossing the section offshore of the counter-current and which also crossed the Cape Farewell section. The volume of flow of the southerly current was 1.08 million cu. m./sec. with a mean temperature of 3.83° C. The closed eddy is probably conditioned by the bottom topography in the vicinity of Fyllas Bank. The net northward volume of flow past the complete Fyllas Bank section is 2.61 million cu. m./sec. However, an additional half million cu. m./sec. cross the section northward and recurve southward between stations 3727 and 3728. If this be considered to be a part of the closed circulation in the central part of the Labrador Sea, a comparison of the figure of 2.6 net northerly at the Fyllas Bank section with the figure of 1.5 net northwesterly at the Cape Farewell section requires that about 1.1 million cu. m./sec. enter the Labrador Sea in the central part of the South Wolf Island-Cape Farewell section either as a recurving part of the Labrador Current off South Wolf Island or as a direct contribution to the Labrador Sea from the outer margins of the Atlantic Current. Of these two, the latter seems the more probable.

The salinity distribution along the Fyllas Bank section is shown in figure 32. The southward flowing band of current is centered near and slightly inshore of station 3729. The valley and ridge just offshore of Fyllas Bank are prominent features of the bottom topography here. They bear the same relationship to the position of the southward flowing band of current as was found during the occupation of similar sections in 1928, and it is considered they are at least a contributing cause of that current. The southeasterly directed current band found in the 1948 occupation of the Cape Farewell section also has been present in earlier occupations of that section. Although the Cape Farewell section has been occupied during a greater number of years than has the Fyllas Bank section, it is not possible to state with any degree of certainty that the southeasterly flowing current band is typical of the Cape Farewell section.

Following the circulatory system of the Labrador Sea northward of

the Fyllas Bank section, what is regarded as the normal picture is one in which the West Greenland Current branches with a part crossing west-

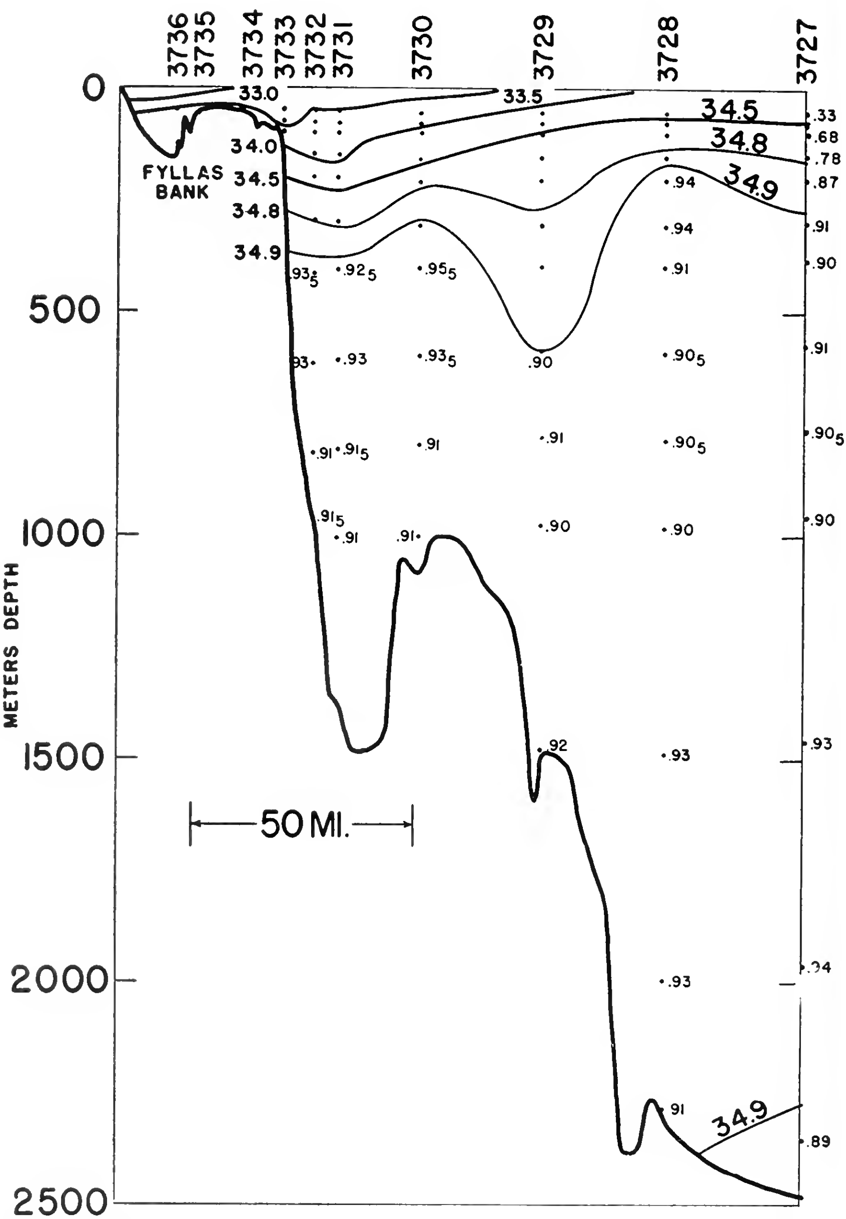

FIGURE 32.—Salinity distribution along a section between the deep water of the Labrador Sea and the Greenland coast in the vicinity of Fyllas Bank, 27–28 July 1948.

ward to the American side south of Davis Strait and a part crossing Davis Strait ridge to enter the counterclockwise circulation of Baffin

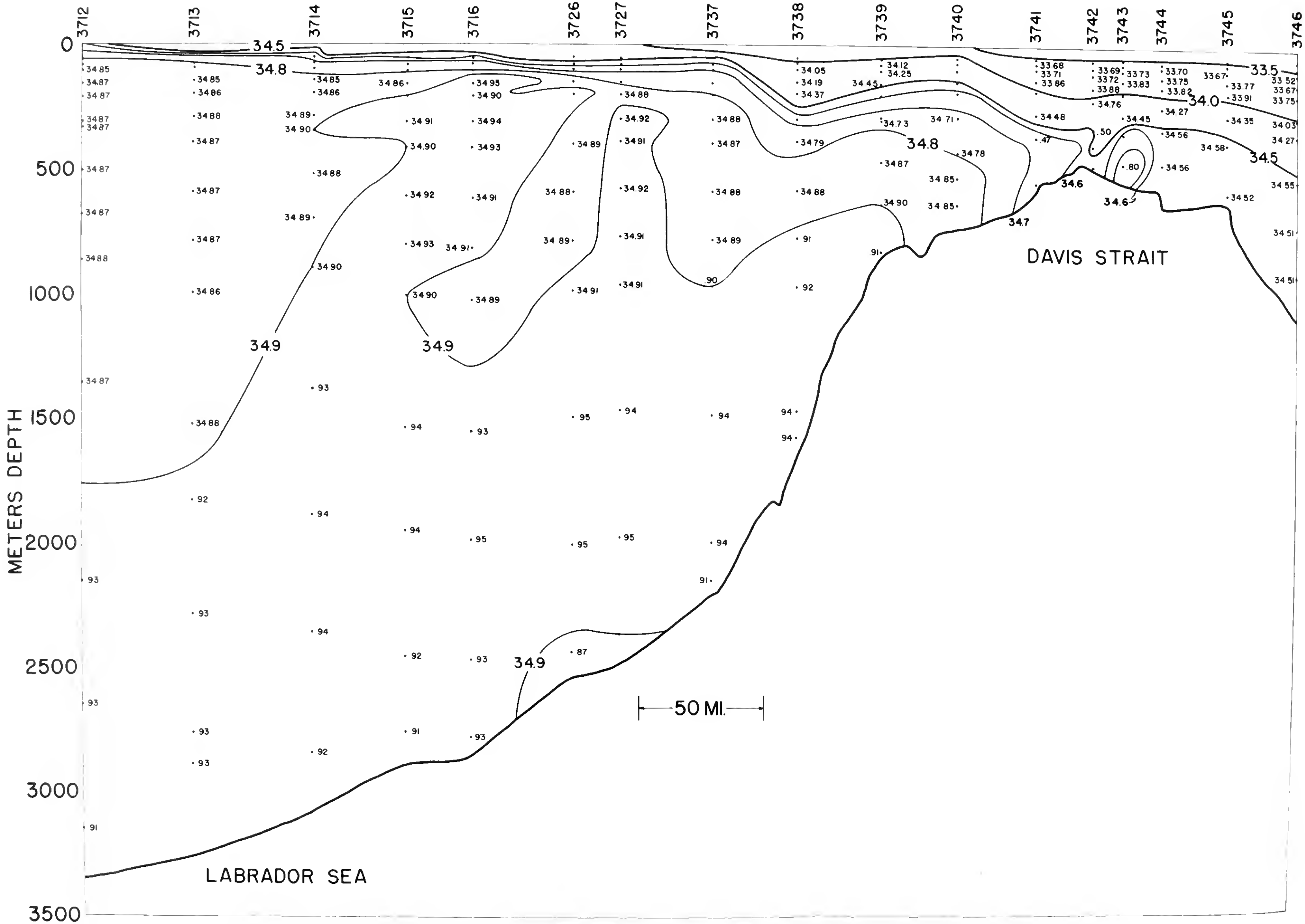

FIGURE 34.—Salinity distribution along a section extending across Davis Strait ridge from the central Labrador Sea to southern Baffin Bay, 18–31 July 1948.

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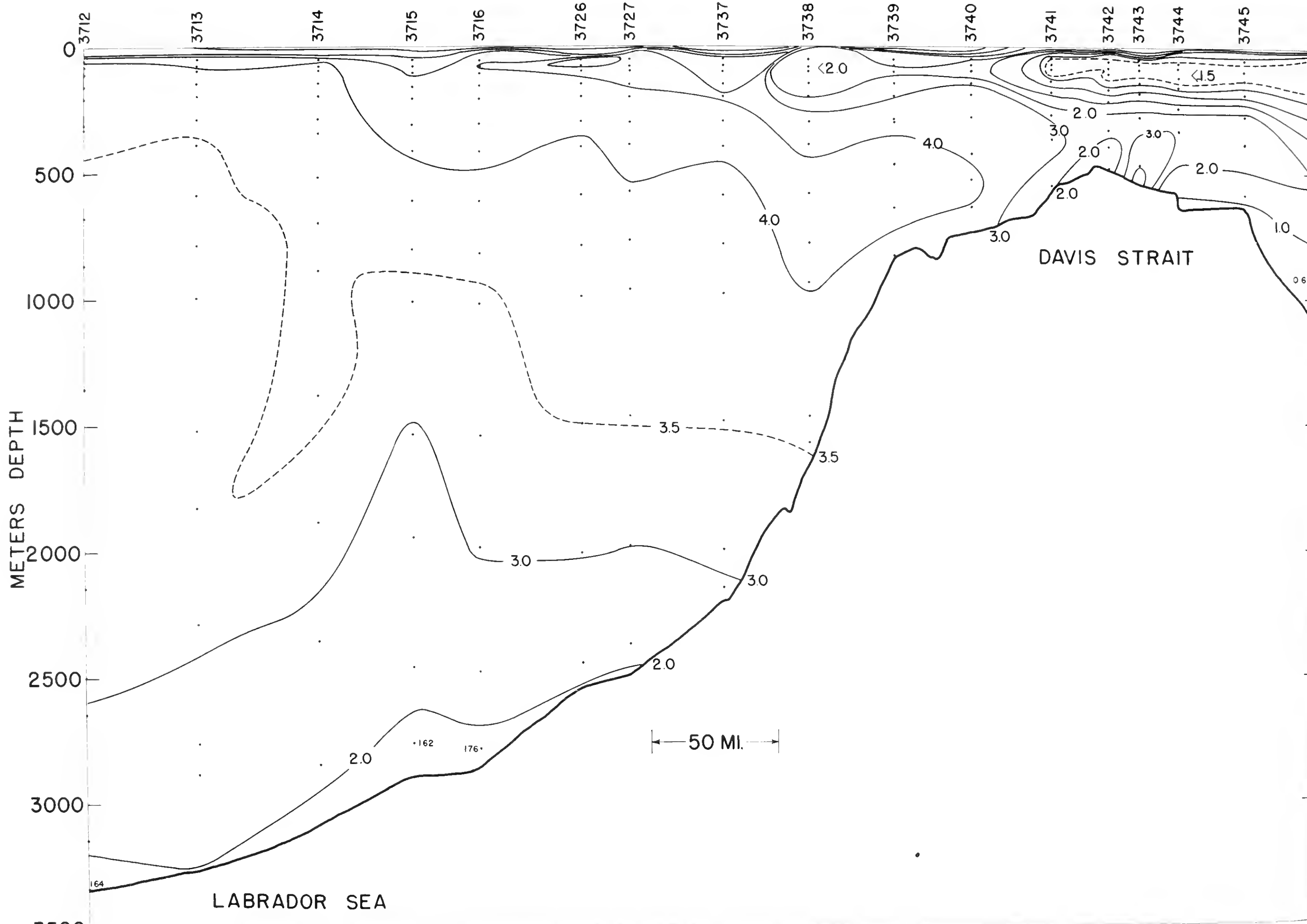

FIGURE 33.—Temperature distribution along a section extending across Davis Strait ridge from the central Labrador Sea to southern Baffin Bay, 18–31 July 1948.

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Bay along the Greenland side. The dynamic height at the northern end of the ridge section is higher than either that at the inner end of the Fyllas Bank section or that at the inner end of the Loks Land section. This is open to two interpretations: either the northern end of the ridge section extends into the southeastern portion of a closed clockwise eddy which lies inshore of the main body of the Baffin Land Current which has swung eastward of the section north of its northern end and is recurving southwestward on its way toward the origins of the Labrador Current; or the northern end of the ridge section extends into the southwestern portion of a closed clockwise eddy in southeastern Baffin Bay. Examination of the temperature and salinity distribution along the ridge section, as illustrated in figures 33 and 34 is inconclusive with respect to this point, and the former of the two possibilities, which has been followed in figure 31, has been chosen as being the more probable in view of what little is known of the circulation in southeastern Baffin Bay. The circulation past the ridge section is similar at other levels to that shown at the surface.

As to the division of the current passing the ridge section into that portion which crosses to the American side to join the Baffin Land Current in forming the Labrador Current, and that portion which represents the contribution of the Baffin Land Current to the Labrador Current, and the portion of the closed clockwise eddy in Baffin Bay, the velocity profile is indeterminate. The water characteristics of temperature and salinity, however, shown in figures 33 and 34, indicate that the dividing line was located in the vicinity of station 3741. Numerical computation gives 2.65 million cu. m./sec. as the volume of flow crossing the ridge section in a westerly direction between stations 3741 and 3746. This is presumed to represent the combination of the Baffin Land Current contribution to the Labrador Current and that part of the closed eddy of southwestern Baffin Bay traversed by the northern end of the ridge section. Numerical computation gives 1.19 million cu. m./sec. as the volume of flow moving westerly across the ridge section between stations 3727 and 3741. As 3727 is also the outer station of the Fyllas Bank section for which a net northerly flow of 2.61 million cu. m./sec. has been found, about 1.42 million cu. m./sec., by difference, represents the West Greenland Current contribution to Baffin Bay. The sum of these components agrees closely with a separate computation of 3.86 million cu. m./sec. of the volume of westerly flow between stations 3727 and 3746. Other volumes of flow computed are 1.25 million cu. m./sec. westerly between stations 3716 and 3727, and 0.58 million cu. m./sec. easterly between stations 3712 and 3716.

The section represented by stations 3716 to 3725 was intended to extend from the deep water of the Labrador Sea to Loks Land on the northern side of the approaches to Frobisher Bay and thus cut across the Labrador Current immediately south of the region where it is formed by the junction of the Baffin Land Current and the westward curving

branch of the West Greenland Current. Actually the stations were displaced somewhat to the south of their intended positions with the consequence that the effect of the westward diversion of water into the northern side of Hudson Strait is noticeable. This, however, does not vitiate the section for purposes of examining the circulation in the Labrador Sea or characteristics of the Labrador Current in this region, but explains the slight inversions of dynamic height along those parts of the section where the flow is more nearly along the section than normal to it. Figure 35 shows the salinity distribution along this

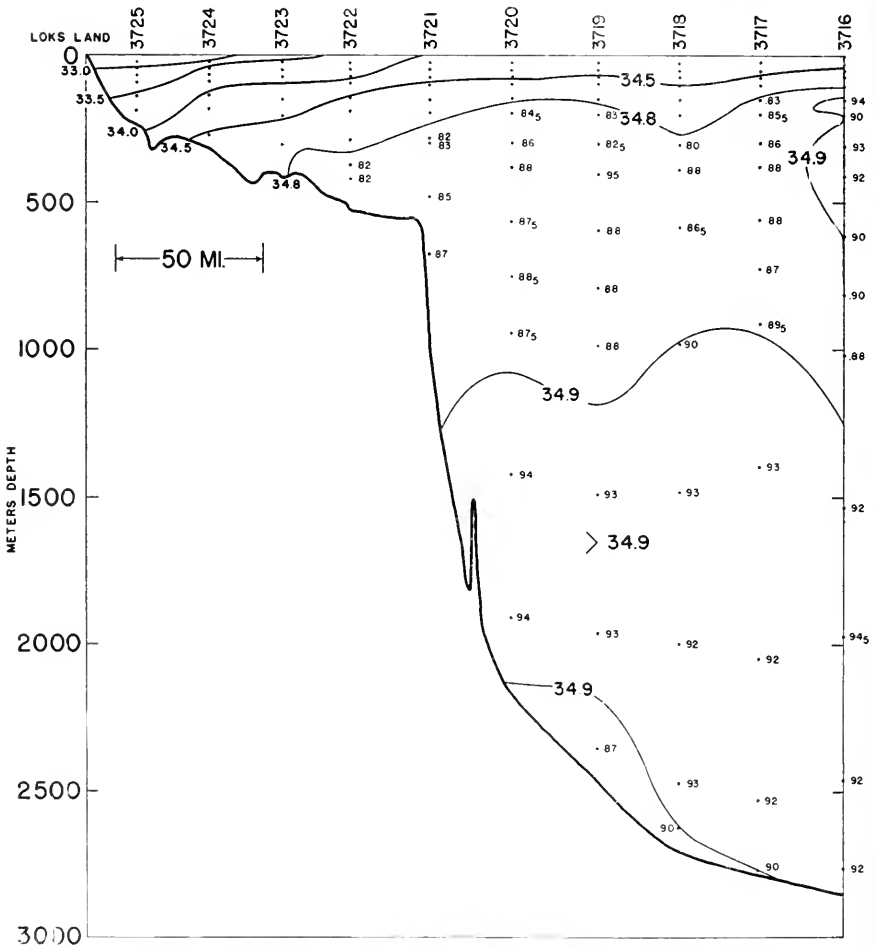

FIGURE 35.—Salinity distribution along a section between the deep water of the Labrador Sea and Loks Land, 24–26 July 1948.

section. The volume of flow past this section, between station 3716 and the beach at Loks Land, was found to be 3.98 million cu. m./sec. net southerly, with a mean temperature of 2.52° C. This volume of flow is to be compared with the sum of that between stations 3716 and

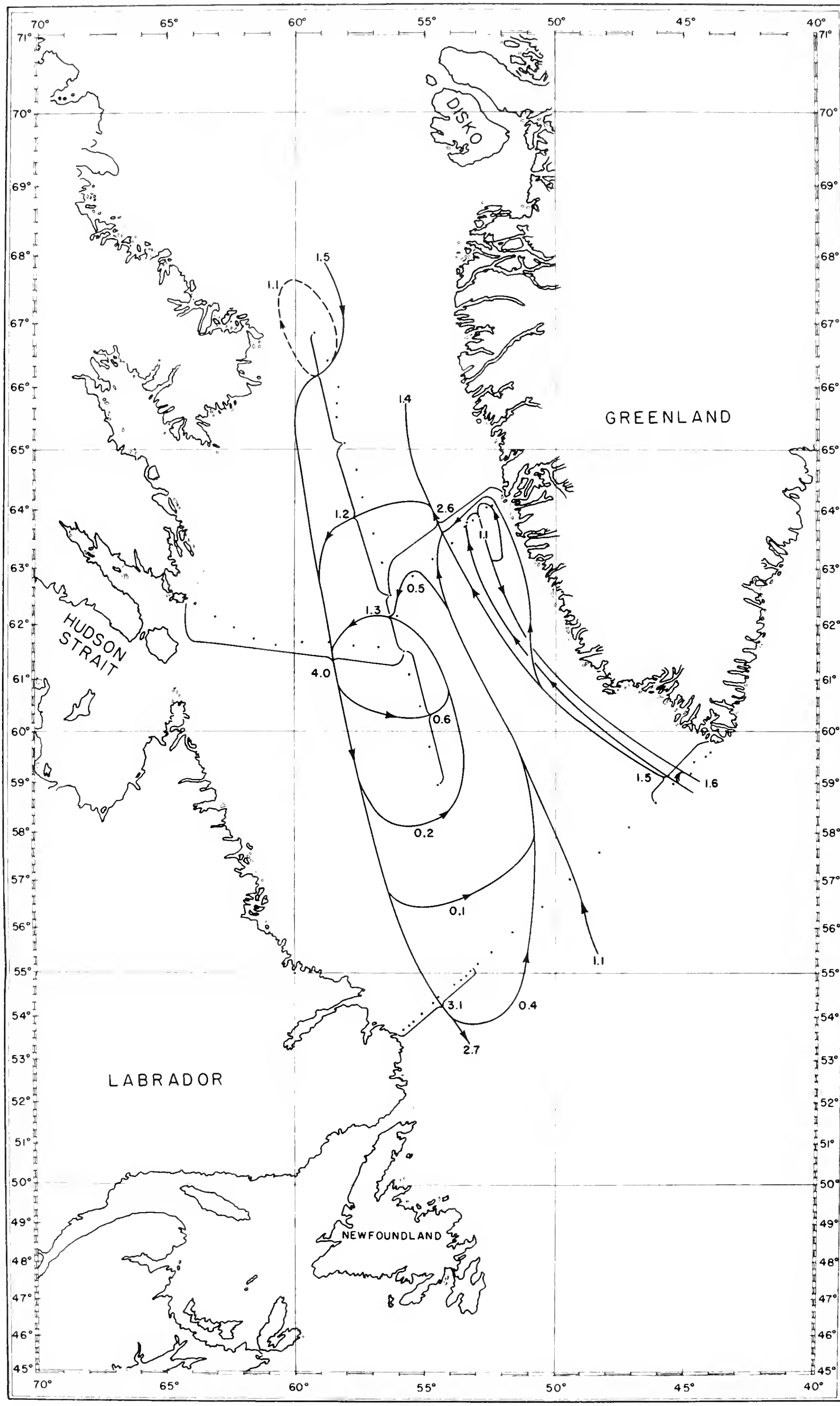

FIGURE 36.—Schematic representation of the horizontal circulation in the upper 1,500 meters in the Labrador Sea and Davis Strait, 11–31 July 1948. Figures indicate volume of flow in units of 1 million cu. m./sec.

3727 (1.25) and that between stations 3727 and 3741 (1.19) and an unmeasured contribution to the Labrador Current by the Baffin Land Current. By difference between the sum of these volumes crossing the ridge section and the volume crossing the Loks Land section the contribution of the Baffin Land Current to the Labrador Current is derived as 1.54 million cu. m./sec.

As noted above, the volume of flow past the ridge section between stations 3741 and 3746, and representing the sum of the Baffin Land Current contribution to the Labrador Current, and a portion of the closed eddy in southwestern Baffin Bay, was found to be 2.65 million cu. m./sec. By difference then, that portion of the closed eddy of Baffin Bay included in the northern end of the ridge section was 1.11 million cu. m./sec.

The circulation inferred from the volumes of flow discussed in the foregoing is shown schematically in figure 36 in which the computed volumes of flow past the various sections have been rounded off to the nearest 0.1 million cu. m./sec. and balanced to a consistent picture on the assumption that no significant net gain or loss occurs in the horizontal exchange through Hudson Strait or in the vertical exchange across the reference surface of 1,500 decibars. The net contribution of the Arctic to Baffin Bay of about 0.1 million cu. m./sec., as indicated by the difference between the West Greenland Current entering Baffin Bay and the Baffin Land Current coming out of Baffin Bay, is so small as to be of the order of magnitude of the error involved in the methods used in its derivation and is much smaller than the value of about one million cu. m./sec. obtained by Smith, Soule and Mosby[3] from a consideration of five sections between Baffin Island and Greenland occupied in the vicinity of Davis Strait in 1924 by the *Michael Sars* and in 1928 by the *Godthaab* and *Marion*. Not all of these sections were close enough to Davis Strait to be usable in deducing the exchange between the Labrador Sea and Baffin Bay, but four of them gave figures approximating 2.2 million cu. m./sec. as the volume of flow of the Baffin Land Current through the strait. This is to be compared to the smaller figure of 1.5 derived above for 1948. Their mean of four sections of the West Greenland Current through the strait was 1.13 million cu. m./sec. as compared with the 1948 figure of about 1.4. Thus it would appear that in 1948 an extremely small net contribution from the Arctic, accompanying a reduced circulation in Baffin Bay, was partially compensated for by an increase in water entering through Davis Strait from the Labrador Sea. This contribution to Baffin Bay has been called the contribution of the West Greenland Current.

The West Greenland Current, however, has been looked upon as having its origin in the junction of the East Greenland Current and the Irminger Current in the vicinity of Cape Farewell, and as pointed out

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[3] Smith, Ed. H., Floyd M. Soule, and Olav Mosby, "Scientific Results of the *Marion* and *General Greene* Expeditions to Davis Strait and Labrador Sea-Physical Oceanography", U. S. Coast Guard Bull. No. 19, pt. 2, p. 71 (1937), Washington.

earlier in the discussion only about 1.5 of the 2.6 million cu. m./sec. crossing the Fyllas Bank section appears as West Greenland Current passing the Cape Farewell section and the difference of about 1.1 million cu. m./sec. apparently represents a direct contribution from the outer margins of the Atlantic Current. Earlier observations have indicated that the North Atlantic eddy does not ordinarily contribute to the circulation of the Labrador Sea more directly than through the Irminger Current by way of Iceland.

Measurements of the West Greenland Current off Cape Farewell, and of the Labrador Current off South Wolf Island have been made more frequently than at other points in the Labrador Sea and Davis Strait. The values of volume of flow (in units of 1 million cu. m./sec.) and mean temperature (in degrees centigrade) resulting from these measurements are summarized in the following table for comparison with the results obtained during the 1948 occupations of these two sections by the *Evergreen*. Except for the 1928 occupations by the *Godthaab* in May and by the *Marion* in July and September, and the March 1935 occupation by the *Meteor*, the earlier occupations were by the *General Greene* during its post-season cruises.

	South Wolf Island			Cape Farewell		
	Volume	Mean temperature	Heat transfer	Volume	Mean temperature	Heat transfer
May 1928	----	----	----	4.0	4.1	16.4
July 1928	5.1	3.3	1.65	----	----	----
September 1928	----	----	----	4.4	5.5	24.1
1931	1.3	1.7	2.2	3.7	5.3	19.5
1933	7.60	3.41	25.90	5.76	4.19	24.13
1934	5.03	2.68	13.50	2.91	5.1	14.86
March 1935	----	----	----	7.5	4.0	30.0
August 1935	4.22	2.76	11.65	8.50	4.99	42.44
1936	3.32	1.27	4.22	6.37	4.05	25.83
1938	4.20	2.92	12.25	5.43	4.69	25.04
1939	4.56	2.69	12.27	6.31	4.19	26.46
1940	2.75	1.52	4.17	----	----	----
1941	2.32	2.60	6.03	6.46	4.87	31.46
1948	3.01	2.21	6.65	1.52	3.93	5.97

From this tabulation it will be seen that, regardless of season, the 1948 occupation of the Cape Farewell section showed the smallest volume of flow, mean temperature and heat transfer so far recorded. Since there is a 7-year gap between the 1948 measurements and the next previous occupation of this section, comparison of this season's results with the average values would not be justified, considering the possible existence of long period changes. As noted in earlier bulletins of this series, while any seasonal variation in volume of flow of the West Greenland

Current at Cape Farewell is small enough to be completely masked by the large year to year variations, its mean temperature does seem to have a seasonal variation with a pronounced increase in mean temperature during the months from June to September. As this period of the year includes all but two of the recorded occupations of the Cape Farewell section the data do not lend themselves to analysis by Fourier series. Figure 37 shows the available observations. In it the values of

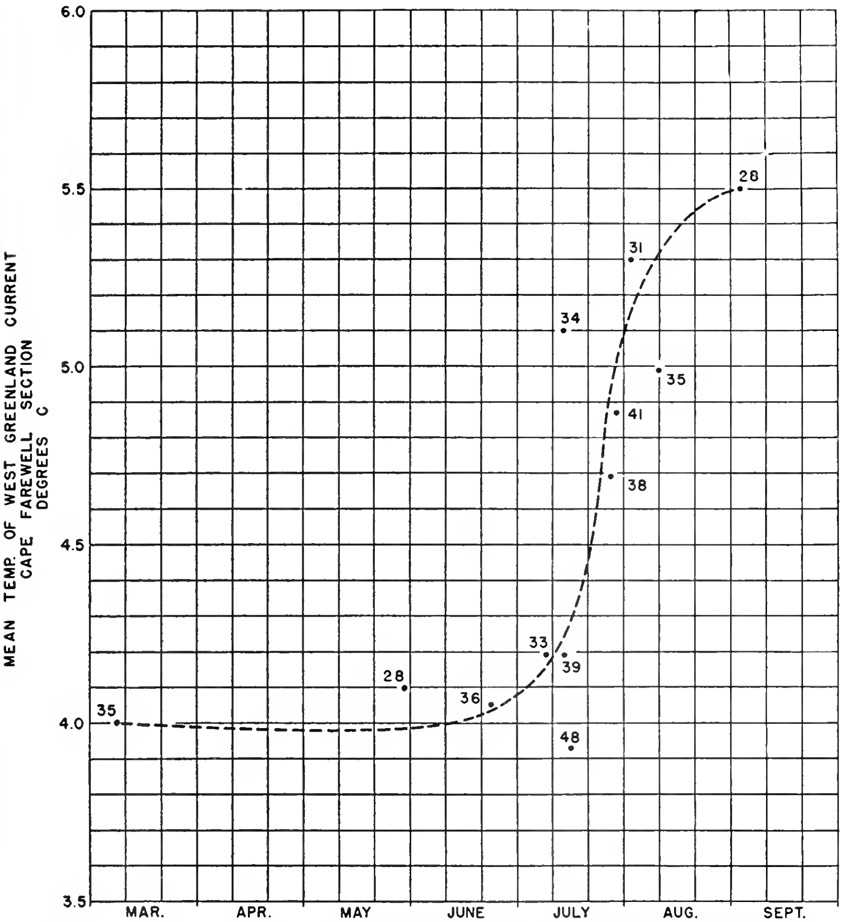

FIGURE 37.—Seasonal fluctuation in mean temperature of the West Greenland Current off Cape Farewell.

mean temperature have been plotted against season of the year and a rough estimate of the seasonal variation for a part of the year is represented by a broken line.

As the heat transfer of the West Greenland Current past Cape Farewell is usually the major source of water-borne heat entering the circulatory systems of the Labrador Sea and Baffin Bay, the section has

been occupied as frequently as practicable to permit accumulation of data for studies of the population and mortality rates of bergs between their source regions in northwestern Greenland and the limits of the area in which they ultimately disintegrate near the steamer lanes in the vicinity of the Grand Banks of Newfoundland. The student of such correlations is warned that the 1948 heat transfer of the West Greenland Current past Cape Farewell must be used with caution since in 1948 a considerable heat transfer was associated with the direct contribution to the Labrador Sea of about a million cu. m./sec. from the northern boundary of the North Atlantic eddy. With presently available methods, determination of the mean temperature and heat transfer depend on graphical summation of elemental cross-sectional areas to which are assigned average velocities and temperatures. In dealing with slow water movements the method breaks down as the absolute uncertainty in velocity becomes a large percentage of the computed velocity. Thus it is not feasible to determine the mean temperature and heat transfer of a water movement embodying large cross section and low velocity, such as the inferred direct contribution of the North Atlantic eddy to the Labrador Sea.

As noted earlier in the discussion in connection with the volume of flow past the triangle north of the Grand Banks, both the volume of flow of the Labrador Current of 3.01 million cu. m./sec. past the South Wolf Island section and its mean temperature of 2.21° C. were lower than the average values for earlier occupations of the South Wolf Island section from 1928 to 1941. This is probably associated with the decreased activity and lower mean temperature of the West Greenland Current which supplies the warmer offshore component of the Labrador Current.

In balancing volumes of flow it has been indicated in figure 36 that of the Labrador Current passing the South Wolf Island section about one third of a million cu. m./sec. recurves northward in the closed circulation of the Labrador Sea, leaving about 2⅔ million to continue southward to the triangle north of the Grand Banks. As about 3⅓ million was the volume of flow found for the northern section of the triangle it is assumed that the offshore corner of the triangle extended into a counterclockwise eddy which contributed about two thirds of a million cu. m./sec. to the circulation past the triangle.

During the 1948 season and post-season cruises field tests were made of a new instrument which holds great promise of utility to the International Ice Patrol. Since the days of Faraday it has been known that water in motion (such as an ocean current) relative to a magnetic field (such as the earth's magnetic field) would result in the generation of an electromotive force just as any other conductor cutting flux. It remained for William S. von Arx of the Woods Hole Oceanographic Institution to translate this principle into a practical instrument for measuring ocean currents from a moving ship. The instrument, which he has named

the geomagnetic electrokinetograph[4], will be called the von Arx current meter, or simply the current meter, for the sake of brevity in this discussion. The electric current which flows as a result of the generated electromotive force is short circuited by the surrounding media (which for practical purposes is the sea in deep water, and is the sea and bottom in shallow water). In the von Arx current meter a pair of electrodes a fixed distance apart are towed from the ship by means of an insulated wire cable of sufficient length to place the electrodes astern of the area disturbed by the ship. The cable is connected to a potentiometer which records the potential difference between the electrodes. The potential difference is proportional to the distance between the electrodes, the vertical intensity of the earth's magnetic field and the component of the ocean current velocity normal to the line between the electrodes. The dimensions have been so selected that one millivolt corresponds to an ocean current of about one knot. The potentiometer indication is good to about 0.05 millivolt.

Prior to the beginning of these field tests it was considered that the theoretical and experimental development of the instrument had proceeded far enough to demonstrate its validity as a current meter within the limitations imposed by magnetic storms and uncertainties as to the departure of the proportionality factor from unity. However, no extensive comparison had yet been made between ocean currents as measured by the current meter and as deduced from dynamic topography.

The essential difference between the two methods is that the current meter measures instantaneous values of current, whereas dynamic topography gives average values on the assumption of a steady state. Thus, if the instantaneous current differed from the mean current either because of periodic (such as tidal currents) or aperiodic (such as transitory wind currents) disturbances, the two methods would be expected to give different results. It was expected that in the ice patrol area the shallower parts of the area would be found to be characterized by tidal currents and that in the deeper waters off shore little or no tidal effect would be encountered. It was hoped that current mapping might be speeded up by running that offshore portion of a survey where no appreciable tidal effects existed by means of the current meter, and by resuming use of straight dynamic topographic methods in the inshore portion of the survey when water affected by tidal currents was encountered. It was also hoped that surveys in which both methods were used throughout would delineate the practical boundary between the two parts of the area.

As the current meter gives the component of the current in a direction normal to the line between the electrodes, standard procedure was to run on the base course for 26 minutes and on a jog at right angles to the base course for 4 minutes each half-hour. Successive jogs were made

[4] von Arx, William S.: "An electromagnetic method for measuring the velocities of ocean currents from a ship under way." Papers in Physical Oceanography and Meteorology published by M.I.T. and W.H.O.I., vol. XI No. 3 (1950), Cambridge and Woods Hole, Mass.

right and left to determine the electrical zero of the instrument by reversals of the electrodes with respect to the ocean current and to maintain the base course as the average course through the water. Instrument log entries were made at each jog, giving the new zero, the two rectangular components of the ocean current and their resulting vector.

At least approximate flow lines are needed in any current chart for ice patrol purposes, and the area to be covered is so large that sections cannot be spaced closely enough to permit the construction of flow lines from vectors alone. For the construction of such flow lines a method was devised which it was hoped could be used ultimately for equivalent dynamic cartography in the outer portion of the area, and for the test period was the basis of comparison of the results of the two methods. In dynamic topography a current represents a gradient in dynamic height in a direction normal to the current. The current C may be expressed as:

$$C = \Delta D / 2\,\omega L \sin \varphi_m$$

where ΔD is the difference in dynamic height between two points separated by a distance L and located at a mean latitude φ_m. ω is the angular speed of rotation of the earth. When convenient units are used and C is expressed in nautical miles per hour, L in nautical miles and ΔD in dynamic meters, this becomes:

$$C = \Delta D / 0.01391\ L \sin \varphi_m.$$

which can be restated as $\Delta D = 0.01391\ LC \sin \varphi_m$.

In this form it is convenient to compute the equivalent difference in dynamic height between any two points from observed components of the current normal to the line connecting the points and the distance between them.

During the season and post-season cruises the current meter was operated between oceanographic stations at which the dynamic heights were determined from the vertical density distribution. If A represents the equivalent difference in dynamic height between a pair of stations as computed from the above formula using as current the average of half-hourly current meter indications, and B represents the difference in dynamic heights derived from density distribution at the stations, (A–B) is a measure of the discrepancy between the two methods, and the cumulative algebraic sum of these discrepancies Σ(A–B) is the amount by which the two methods would disagree if the computation were carried along a section from a common starting point.

The values of (A–B) were computed for each of 155 intervals between pairs of stations and, arranged in the form of the several sections in which the stations were disposed, plotted with the resulting values of Σ(A–B) against distance along the section. Some of these sections which exemplify the results of the tests are shown in figure 38. The average intervals between stations was 22.3 nautical miles. With errors in the current meter measurement of about 0.05 knot and in distance between

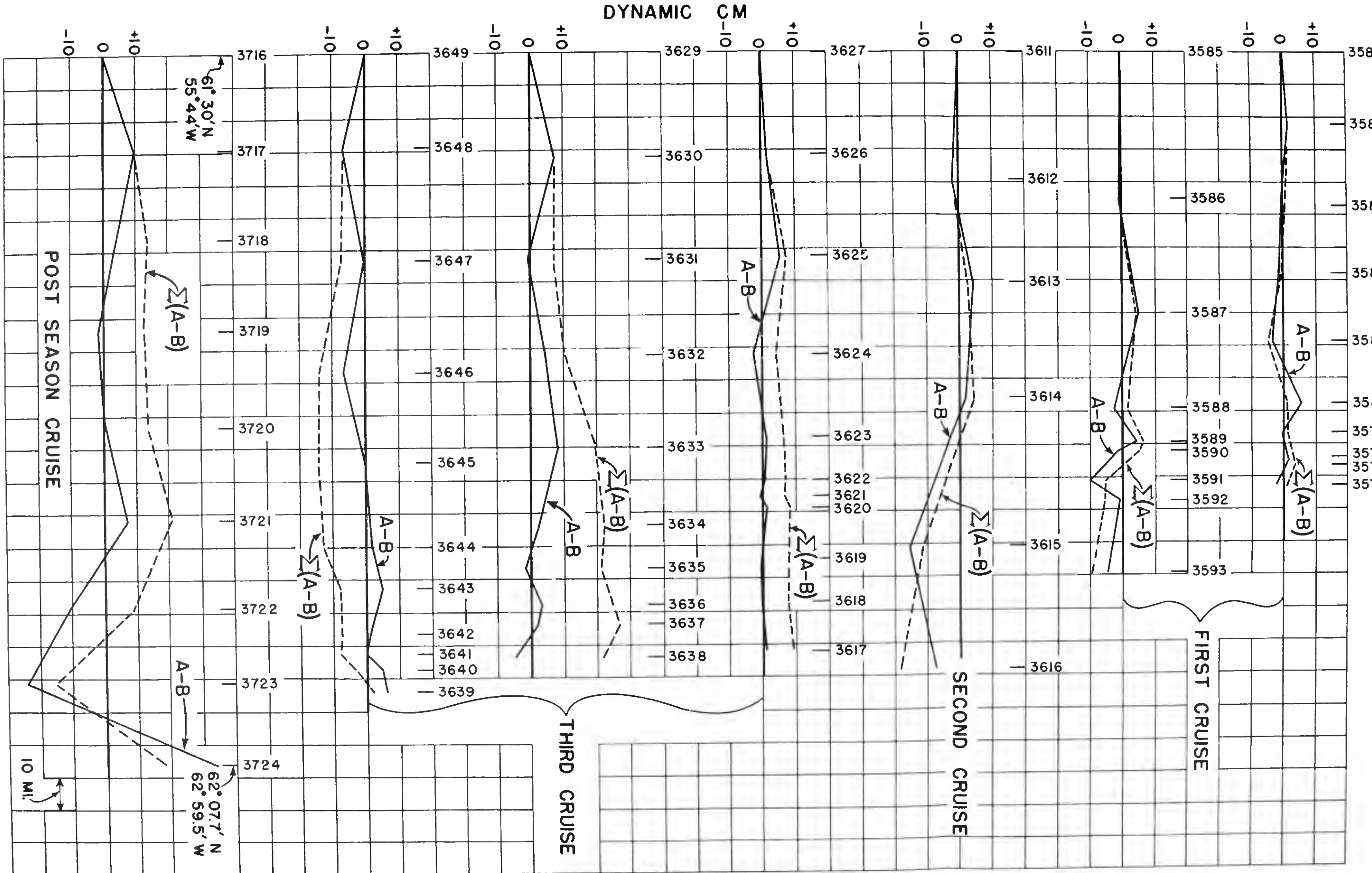

FIGURE 38.—Examples of the discrepancies, station to station and cumulative, between the equivalent difference in dynamic height as derived from the von Arx current meter (A), and the difference in dynamic height derived from density distribution (B), along sections occupied during 1948. The deep end of sections is at the left and A and B are positive with increasing dynamic height from left to right.

stations of about one-half mile, the resulting error in individual values of A should amount to the equivalent of only a few tenths of a dynamic millimeter in addition to such error as may be introduced through the use of erroneous values of the vertical intensity of the earth's magnetic field and of the proportionality factor. The values of (A–B) were found to fluctuate widely, however, and reached numerical values of as much as 17 dynamic centimeters and even greater values in the vicinity of Loks Land and Davis Strait. The average value of (A–B) was 3 mm. ±68 mm. Excluding the six intervals from stations 3721 to 3724 in the approach to Loks Land and stations 3743 to 3746 in the vicinity of Davis Strait where it is known that swift tidal currents exist, the average value of (A–B) was still 3 mm. but with a variability of ±55 mm. Expressed as a gradient this average value amounts to only about one-seventh mm./mile.

It will be seen from figure 38, however, that the value of (A–B) changes irregularly from station to station and without dependence on the length of the station interval. The upper section shown in figure 38, covering stations 3585 to 3576 shows the type of discrepancy distribution which had been expected, with small values of (A–B) in the offshore part of the section and larger differences near the shoaler water of the Grand Banks. Such sections as that from station 3627 to station 3617 where a discrepancy of 60 mm. occurs in the outer end of the section and the inner end of the section has relatively small discrepancies, have prevented the division of the area into two parts, one of which is characterized by good agreement between the two methods. The section including stations 3611 to 3616 illustrates an extreme discrepancy of about 160 mm. Such sections as those including stations 3629 to 3638 and stations 3649 to 3639 show large discrepancies of about 60 mm. distributed throughout the section without regard to length of station interval or location with respect to distance from the Grand Banks. The section including stations 3716 to 3724 shows extreme discrepancies of as much as 340 mm. in the approach to Loks Land where swift tidal currents are known to exist, but it also shows a discrepancy of nearly 100 mm. near the outer end which is located in the middle of the Labrador Sea.

No corrections were applied to the current meter results for geographical distribution of the vertical component of the earth's magnetic field intensity and a constant value of 50,000γ was used throughout. While chart values in the area of operation varied from 46,000 to 56,000 the errors introduced by the use of the constant field intensity would affect the absolute and average values of (A–B) but would not account for the wide variation in (A–B) between adjacent pairs of stations. The proportionality factor was taken as unity throughout the computations. Although this factor changes considerably (between about 1 and 2) from place to place in shallow water, von Arx reports that it is very nearly constant at about 1.05 in water distant from land and deeper than 50

fathoms. Most of the observations were in water which was deeper than this and the 5 percent difference from the value used would affect only the absolute and average values of (A–B) as in the case of the field intensity. Another possible source of error is that no correction has been made for lee-way and it is possible that the ship's head was oriented more into the weather than was the electrode cable. More recent observations by von Arx and others, however, in which the orientation of the electrode cable was determined by means of a remote-reading Magnesyn compass system discounts this source of error as of little probable significance in the results of the observations reported here.

Another possible source of error which has not yet been exhaustively studied is that involved in taking the product of the average of half-hourly values of the normal component on any run between stations and the station interval instead of the integral of the products of elemental increments of distance and corresponding instantaneous values of normal component. Work is continuing on the development of the current meter and the prospect is good that solutions to the various problems involved will permit the ultimate application of the method to ice patrol current mapping with a reduction in the elapsed time required for the production of a useful current map of a given area in the Grand Banks region.

While the problems of current mapping have to do with the complete velocity vector another application of the von Arx current meter involving only the direction of the current seems assured with the instrument and methods as presently existing. This is the use of the current meter to assist a patrol cutter so equipped in locating bergs which have been reported in areas not covered by a recent current map. In such an application the cutter would proceed to the reported position of the berg and thence down-stream as indicated by the current meter, instead of the present procedure of box- or ladder-searches. If the down-stream direction indicated by the current meter is in error by 5°, the cutter would be 12 miles off course after steaming about 140 miles. It is expected that the berg would be located either visually or with radar assistance before such a distance had been traveled. If wind-currents affected the berg's drift significantly during the interval between the time the berg was reported and the time the cutter began its down-stream search, presumably such currents would have been sufficiently well established as to persist until the time of the cutter's search. The major anticipated source of discrepancy is the circumstance in which the current meter would indicate the direction of transitory wind currents different in direction from that of the deeper currents and too shallow to have a significant effect on the berg's drift. Should tests result in unsuccessful searches, a possible remedy would be the towing of a subsurface pair of electrodes in addition to the surface electrodes. Such practical test searches still await the combination of simultaneously available ships, current meter equipments and bergs.

SUMMARY

1. The circulation in the ice patrol area in the vicinity of the Grand Banks during the 1948 season, as derived from three current surveys and portrayed by as many dynamic topographic maps supported by several vertical temperature sections, has been described.

2. The temperature-salinity relationships of the different water masses found in the vicinity of the Grand Banks in 1948 have been compared with results obtained prior to 1941 and discussed in terms of the mixing zones along the boundaries of the Labrador Current and the Atlantic Current.

3. The volume of flow and mean temperature of the Labrador Current past three selected sections during the 1948 season have been compared with the results of similar measurements made during the period 1934–41.

4. Three sections, disposed in the shape of a triangle just northward of the Grand Banks and including the area in which the Labrador Current divides into the branches which flow along the Avalon Peninsula and along the eastern slope of the Grand Banks, have been discussed with regard to the volumes of flow in the two branches and the location of their separation.

5. The thermal conditions in the intermediate water of the Labrador Sea found in 1948 have been compared with those found during the period of earlier measurements ending in 1941.

6. The results of a study of five sections across the major currents in the Labrador Sea and Davis Strait, presented in the form of a balance of volume of flow, indicate that in 1948 a deficiency in the Irminger Current was partially compensated for by a direct contribution from the North Atlantic eddy to the circulation of the Labrador Sea.

7. The volume of flow, mean temperature and heat transfer of the West Greenland Current past Cape Farewell and of the Labrador Current past South Wolf Island have been compared with the results of earlier occupations of these sections.

8. The results of field tests of a new instrument, the von Arx geomagnetic electrokinetograph, operated over a distance of about 3,500 miles, have been summarized.

The data collected during the 1948 season and post-season cruises are tabulated below. The individual station headings give the station number, date, geographic position, depth of water, and the dynamic height of the sea surface used in the construction of the dynamic topographic charts shown in figures 17, 19, 26, and 27 for which the dynamic heights have been referred to the 1,000-decibar surface, and for figure 31 for which the dynamic heights have been referred to the 1,500-decibar surface. The depths of water are uncorrected sonic soundings based on a sounding velocity of 800 fathoms per second. Where the depths of the scaled values are enclosed in parentheses the data are based on

extrapolated vertical distribution curves of temperature or salinity or both. Asterisks appearing before observed temperatures indicate that these temperatures were determined from the depth of reversal and the corrected reading of an unprotected thermometer. The symbol σ_t signifies 1000 (density−1) at atmospheric pressure and temperature t.

Table of Oceanographic Data

STATIONS OCCUPIED IN 1948

Station 3576; Apr. 12; latitude 43°34′ N., longitude 51°30′ W.; depth 89 meters, dynamic height 971.050

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.18	33.23	0	1.18	33.23	26.64
26	0.61	33.25	25	0.65	33.25	26.68
53	0.42	33.34	50	0.45	33.33	26.75
79	0.60	33.41	75	0.60	33.40	26.80

Station 3577; Apr. 12; latitude 43°29′ N., longitude 51°35′ W.; depth 181 meters, dynamic height 971.019

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.46	33.50	0	1.46	33.50	26.83
24	3.73	33.97	25	3.75	34.00	27.04
47	6.40	34.48	50	6.75	34.54	27.11
71	7.89	34.79	75	7.85	34.79	27.15
95	6.54	34.69	100	6.30	34.65	27.26
142	4.68	34.33	150	3.50	34.30	27.30

Station 3578; Apr. 12; latitude 43°27.5′ N., longitude 51°41′ W.; depth 320 meters, dynamic height 971.028

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.92	34.08	0	4.92	34.08	26.97
24	5.01	34.12	25	5.05	34.13	27.00
48	7.38	34.68	50	7.40	34.69	27.14
72	7.49	34.71	75	7.45	34.71	27.15
96	6.98	34.64	100	6.95	34.64	27.16
144	6.84	34.69	150	6.80	34.70	27.23
192	6.69	34.75	200	6.65	34.75	27.29
288	5.07	34.65	300	4.90	34.64	27.42

Station 3579; Apr. 12; latitude 43°24′ N., longtitude 51°46′ W.; depth 622 meters, dynamic height 971.019

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.48	33.71	0	3.48	33.71	26.83
24	3.66	33.82	25	3.70	33.83	26.90
48	5.76	34.28	50	5.75	34.29	27.04
72	5.77	34.44	75	5.75	34.46	27.18
96	6.35	34.54	100	6.35	34.56	27.18
145	-----	34.61	150	5.75	34.61	27.30
193	5.08	34.52	200	5.00	34.52	27.32
289	4.64	34.64	300	4.65	34.68	27.48
314	4.63	34.73	400	4.75	34.86	27.62
502	4.83	34.93	600	4.85	34.93	27.65

Station 3580; Apr. 12; latitude 43°15′ N., longitude 51°57′ W.; depth 1298 meters, dynamic height 971.017

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.25	33.63	0	3.25	33.63	26.78
25	8.19	34.72	25	8.19	34.72	27.05
50	-----	35.02	50	8.70	35.02	27.20
75	-----	-----	75	8.15	34.91	27.20
100	7.33	34.76	100	7.33	34.76	27.20
150	7.15	34.73	150	7.15	34.73	27.20
201	3.74	34.24	200	3.75	34.24	27.23
301	7.34	34.96	300	7.34	34.96	27.36
180	4.74	34.82	400	5.00	34.79	27.53
380	5.20	34.76	600	4.25	34.97	27.76
588	4.24	35.02	800	4.10	34.95	27.76
781	4.15	-----	1,000	3.90	34.92	27.76
1,018	3.93	-----	-----	-----	-----	-----

Station 3581; Apr. 12; latitude 43°05′ N., longitude 52°17′ W.; depth 2524 meters, dynamic height 971.057

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.85	34.66	0	7.86	34.66	27.05
28	9.06	34.95	25	9.05	34.95	27.09
56	9.15	34.99	50	9.05	34.99	27.12
84	8.93	34.95	75	9.00	34.97	27.12
111	8.64	34.90	100	8.75	34.92	27.12
168	8.41	34.89	150	8.50	34.89	27.13
224	7.89	34.90	200	8.10	34.90	27.20
335	7.26	34.99	300	7.50	34.96	27.34
406	6.02	34.93	400	6.15	34.93	27.49
597	5.08	34.97	600	5.05	34.97	27.67
780	4.72	35.01	800	4.65	35.01	27.75
974	3.97	34.92	1,000	3.95	34.92	27.75
1,461	3.82	34.94	1,500	3.80	34.94	27.78

Station 3582; Apr. 12; latitude 42°47′ N., longitude 52°28′ W.; depth 3406 meters, dynamic height 971.031

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.39	33.69	0	4.39	33.69	26.73
25	7.84	34.63	25	7.84	34.63	27.02
50	9.89	35.12	50	9.89	35.12	27.08
75	8.93	34.92	75	8.92	34.92	27.09
100	7.98	34.79	100	7.98	34.79	27.13
150	6.96	34.65	150	6.95	34.65	27.17
201	6.11	34.64	200	6.15	34.64	27.27
301	6.14	34.85	300	6.15	34.85	27.44
388	4.66	34.79	400	4.60	34.80	27.58
582	4.42	34.90	600	4.40	34.90	27.68
776	4.17	34.93	800	4.15	34.93	27.73
973	4.02	34.94	1,000	4.00	34.94	27.76
1,466	3.77	34.96	1,500	3.75	34.96	27.80

Station 3583; Apr. 13; latitude 42°33′ N., longitude 52°49′ W.; depth 3658 meters, dynamic height 971.067

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.75	33.66	0	4.75	33.66	26.66
25	5.79	33.95	25	5.79	33.95	26.77
50	6.79	34.27	50	6.79	34.27	26.90
75	9.01	34.89	75	9.01	34.89	27.05
100	9.48	35.01	100	9.48	35.01	27.06
150	9.26	34.97	150	9.26	34.97	27.08
200	8.72	35.00	200	8.72	35.00	27.18
300	5.29	34.67	300	5.29	34.67	27.40
431	4.55	34.78	400	4.65	34.76	27.55
628	4.27	34.88	600	4.30	34.87	27.67
813	4.11	34.91	800	4.10	34.91	27.73
1,005	3.90	34.91	1,000	3.90	34.91	27.75
1,467	3.82	34.96	1,500	3.80	34.96	27.80

Station 3584; Apr. 13; latitude 42°15.5′ N., longitude 52°20′ W.; depth 3768 meters, dynamic height 970.995

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	9.07	34.93	0	9.07	34.93	27.07
24	9.33	35.03	25	9.35	35.03	27.10
49	9.51	35.07	50	9.50	35.07	27.11
73	8.86	34.96	75	8.85	34.95	27.12
98	7.70	34.78	100	7.70	34.78	27.16
146	7.82	34.895	150	7.80	34.89	27.23
195	6.33	34.765	200	6.35	34.77	27.35
293	6.26	35.015	300	6.25	35.01	27.55
397	5.48	34.98	400	5.50	34.98	27.61
586	4.80	35.00	600	4.75	35.00	27.72
773	4.44	34.98	800	4.40	34.98	27.74
969	4.33	34.995	1,000	4.30	34.99	27.76
1,462	3.81	34.96	1,500	3.80	34.96	27.80

STATIONS OCCUPIED IN 1948—Continued

Station 3585; Apr. 13; latitude 42°01′ N., longitude 52°01′ W.; depth 3768 meters, dynamic height 971.004

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.91	34.31	0	6.91	34.31	26.91
25	6.79	34.42	25	6.79	34.42	27.01
50	9.59	35.09	50	9.59	35.09	27.11
75	8.85	34.98	75	8.85	34.98	27.13
100	8.25	34.885	100	8.25	34.88	27.15
149	6.67	34.72	150	6.65	34.72	27.27
199	6.28	34.78	200	6.30	34.78	27.36
299	4.83	34.71	300	4.85	34.71	27.49
384	4.73	34.84	400	4.75	34.86	27.62
557	4.73	34.975	600	4.70	34.96	27.70
717	4.52	34.945	800	4.25	34.93	27.72
898	3.85	34.92	1,000	3.85	34.93	27.76
1,355	3.81	34.96	1,500	3.80	34.96	27.80

Station 3586; Apr. 13; latitude 41°59′ N., longitude 51°01′ W.; depth 3155 meters, dynamic height 971.047

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.07	33.695	0	5.07	33.70	26.66
24	5.88	34.07	25	5.95	34.10	26.87
48	8.91	34.85	50	9.00	34.90	27.06
72	10.03	35.15	75	10.10	35.16	27.08
96	10.18	35.195	100	10.20	35.19	27.08
143	9.20	35.03	150	9.10	35.03	27.14
191	8.66	35.03	200	8.55	35.02	27.23
287	6.32	34.82	300	6.30	34.83	27.40
382	6.20	34.98	400	6.15	34.99	27.51
570	5.09	35.01	600	4.95	35.01	27.71
756	4.37	34.97	800	4.30	34.97	27.75
946	4.11	34.96	1,000	4.05	34.96	27.77
1,420	3.61	34.945	------	------	------	------

Station 3587; Apr. 14; latitude 42°26′ N., longitude 51°30′ W.; depth 1829 meters, dynamic height 971.001

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.08	34.40	0	7.08	34.40	26.95
22	7.13	34.555	25	7.20	34.58	27.08
44	9.31	35.015	50	9.30	35.01	27.10
65	9.00	35.005	75	8.95	34.99	27.14
87	8.76	34.96	100	8.65	34.95	27.15
131	8.33	34.93	150	8.00	34.91	27.23
174	7.43	34.88	200	7.10	34.88	27.33
261	6.23	34.895	300	5.70	34.86	27.50
286	5.76	34.855	400	5.50	34.99	27.62
423	5.37	35.01	600	4.65	34.97	27.72
555	4.60	34.965	800	4.65	34.97	27.72
643	4.57	34.975	1,000	4.55	34.96	27.72
772	4.70	34.97	------	------	------	------

Station 3588; Apr. 14; latitude 42°47′ N., longitude 51°02′ W.; depth 1646 meters, dynamic height 971.094

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	12.41	35.65	0	12.41	35.65	27.03
30	12.42	35.65	25	12.40	35.65	27.03
60	12.41	35.64	50	12.40	35.64	27.02
91	12.41	35.64	75	12.40	35.64	27.02
113	10.91	35.36	100	11.95	35.55	27.04
169	9.26	35.09	150	9.60	35.14	27.15
225	8.81	35.055	200	9.00	35.06	27.19
338	6.01	34.84	300	7.00	34.91	27.37
406	6.14	34.745	400	5.80	34.78	27.42
588	4.82	34.83	600	4.80	34.84	27.59
757	4.50	34.97	800	4.50	34.98	27.73
911	4.45	35.00	1,000	4.45	35.00	27.76

Station 3589; Apr. 14; latitude 42°53′ N., longitude 50°54′ W.; depth 1115 meters, dynamic height 971.020

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	11.98	35.565	0	11.98	35.56	27.04
28	11.94	35.54	25	11.95	35.55	27.04
55	8.33	34.83	50	8.90	34.96	27.12
83	7.00	34.61	75	7.15	34.63	27.12
111	7.01	34.63	100	7.00	34.62	27.14
166	7.35	34.78	150	7.25	34.74	27.20
221	6.99	34.84	200	7.20	34.83	27.27
332	5.18	34.87	300	5.60	34.87	27.52
402	4.96	34.84	400	4.95	34.84	27.57
615	4.21	34.89	600	4.25	34.89	27.69
836	4.04	34.905	800	4.05	34.90	27.72
1,062	------	34.905	1,000	4.05	34.91	27.73

Station 3590; Apr. 14; latitude 42°56′ N., longitude 50°52′ W.; depth 622 meters, dynamic height 971.029

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.60	34.50	0	6.60	34.50	27.10
26	6.53	34.50	25	6.55	34.50	27.11
52	7.27	34.65	50	7.25	34.65	27.13
78	7.03	34.64	75	7.10	34.65	27.15
104	6.19	34.50	100	6.30	34.51	27.15
151	6.62	34.585	150	6.55	34.57	27.16
206	7.57	34.795	200	7.55	34.78	27.18
310	6.88	34.915	300	7.05	34.92	27.37
371	3.87	34.73	400	3.85	34.75	27.62
574	4.23	34.89	(600)	4.25	34.90	27.70

Station 3591; Apr. 14; latitude 43°02.5′ N., longitude 50°46′ W.; depth 172 meters, dynamic height 971.107

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	-0.03	33.095	0	-0.03	33.10	26.59
26	1.26	33.385	25	1.25	33.38	26.74
51	5.50	34.24	50	5.20	34.22	27.06
77	7.60	34.67	75	7.50	34.65	27.09
103	8.45	34.85	100	8.35	34.84	27.11
154	8.81	34.96	150	8.80	34.95	27.13

Station 3592; Apr. 14; latitude 43°03′ N., longitude 50°37′ W.; depth 89 meters, dynamic height 971.123

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.50	33.135	0	0.50	33.14	26.60
27	0.48	33.14	25	0.50	33.14	26.60
55	-0.20	33.32	50	-0.10	33.30	26.75
82	-0.22	33.37	75	-0.25	33.36	26.81

Station 3593; Apr. 14; latitude 43°19′ N., longitude 50°16′ W.; depth 68 meters, dynamic height 971.114

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.67	33.43	0	1.67	33.43	26.76
29	1.66	33.42	25	1.67	33.42	26.76
58	1.23	33.47	50	1.35	33.45	26.80

Station 3594; Apr. 15; latitude 43°01′ N., longitude 50°13′ W.; depth 89 meters, dynamic height 971.120

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.52	33.17	0	0.52	33.17	26.62
25	0.53	33.18	25	0.53	33.18	26.63
50	0.22	33.23	50	0.22	33.23	26.69
75	------	33.32	75	0.10	33.32	26.77

Station 3595; Apr. 15; latitude 42°54′ N., longitude 50°14′ W.; depth 320 meters, dynamic height 971.110

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.65	33.20	0	0.65	33.20	26.65
25	0.72	33.21	25	0.72	33.21	26.65
49	0.12	33.255	50	0.10	33.26	26.72
74	0.02	33.37	75	0.00	33.38	26.82
97	-0.15	33.455	100	-0.15	33.46	26.90
146	4.36	34.11	150	4.60	34.15	27.07
194	5.81	34.40	200	5.80	34.41	27.13
291	4.58	34.49	300	4.45	34.50	27.36

Station 3596; Apr. 15; latitude 42°44′ N., longitude 50°16′ W.; depth 1463 meters, dynamic height 971.073

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	8.31	34.85	0	8.31	34.85	27.13
29	8.30	34.845	25	8.30	34.85	27.13
51	8.69	34.92	50	8.65	34.91	27.12
74	9.10	35.015	75	9.10	35.02	27.14
97	9.00	35.00	100	9.00	35.00	27.11
143	8.01	34.82	150	7.95	34.82	27.16
189	7.71	34.815	200	7.65	34.81	27.20
280	6.79	34.77	300	6.80	34.80	27.31
377	6.87	34.94	400	6.60	34.94	27.44
520	4.82	34.90	600	4.45	34.88	27.66
632	4.31	34.88	800	4.10	34.89	27.71
771	4.10	34.89	1,000	3.95	34.90	27.73
1,028	3.93	34.91				

Station 3597; Apr. 15; latitude 42°21′ N., longitude 50°10′ W.; depth 2798 meters, dynamic height 971.180

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	12.79	35.725	0	12.79	35.72	27.01
24	12.78	35.73	25	12.80	35.73	27.01
47	12.78	35.73	50	12.80	35.73	27.01
71	12.78	35.74	75	12.80	35.74	27.02
94	12.77	35.74	100	12.80	35.74	27.02
141	12.83	35.74	150	12.80	35.74	27.02
188	12.79	35.73	200	12.70	35.72	27.03
282	10.47	35.25	300	9.45	35.08	27.12
367	5.77	34.52	400	5.75	34.57	27.27
548	5.70	34.79	600	5.60	34.86	27.51
729	5.28	35.03	800	4.85	34.99	27.70
915	4.19	34.93	1,000	4.10	34.94	27.75
1,389	3.93	34.96				

Station 3598; Apr. 15; latitude 41°59′ N., longitude 50°17′ W.; depth 3329 meters, dynamic height 971.102

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	11.28	35.40	0	11.28	35.40	27.05
29	10.94	35.35	25	11.00	35.36	27.05
56	10.71	35.30	50	10.75	35.31	27.08
85	10.54	35.26	75	10.60	35.27	27.08
113	10.36	35.225	100	10.45	35.24	27.08
170	9.73	35.09	150	9.95	35.13	27.08
226	9.12	34.975	200	9.45	35.03	27.08
339	5.84	34.555	300	6.35	34.64	27.24
326	5.53	34.53	400	5.20	34.64	27.39
496	4.72	34.78	600	5.00	34.95	27.66
670	5.21	35.02	800	4.80	35.02	27.74
848	4.67	35.015	1,000	4.45	35.00	27.76
1,311	3.97	34.98				

Station 3599; Apr. 15; latitude 41°31′ N., longitude 50°23′ W.; depth 3676 meters

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
495	4.97	34.97				
670	4.13	34.94				
837	3.97	34.95				
1,732	3.60	34.91				

Station 3600; May 6; latitude 43°20′ N., longitude 50°13′ W.; depth 62 meters, dynamic height 971.074

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.06	33.13	0	3.06	33.13	26.41
26	2.80	33.17	25	2.80	33.17	26.47
53	1.08	33.33	50	1.08	33.28	26.68

Station 3601; May 6; latitude 42°59′ N., longitude 50°17′ W.; depth 93 meters, dynamic height 971.070

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.09	32.95	0	6.09	32.95	26.42
28	-0.21	32.99	25	-0.20	32.98	26.51
57	-0.91	33.295	50	-0.80	33.26	26.75
85	0.42	33.57	75	-0.20	33.49	26.92

Station 3602; May 6; latitude 42°53′ N., longitude 50°18′ W.; depth 247 meters, dynamic height 971.038

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.09	34.17	0	6.09	34.17	26.91
25	6.73	34.40	25	6.73	34.40	27.01
50	6.89	34.445	50	6.89	34.445	27.02
75	7.67	34.605	75	7.67	34.605	27.03
100	8.06	34.67	100	8.06	34.67	27.03
149	5.87	34.875	150	8.60	34.88	27.10
199	7.62	34.81	200	7.62	34.80	27.19
229	6.43	34.68	230	6.44	34.67	27.26

Station 3603; May 7; latitude 42°44′ N., longitude 50°18′ W.; depth 1829 meters, dynamic height 971.030

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	9.39	34.71	0	9.39	34.71	26.85
25	9.36	34.76	25	9.36	34.76	26.89
49	8.59	34.79	50	8.60	34.79	27.03
74	8.69	34.865	75	8.70	34.87	27.09
98	8.48	34.875	100	8.50	34.88	27.12
147	8.52	34.95	150	8.50	34.95	27.18
197	7.43	34.825	200	7.40	34.82	27.24
295	5.87	34.80	300	5.85	34.805	27.43
390	5.54	34.94	400	5.50	34.935	27.59
586	4.13	34.875	600	4.10	34.87	27.70
781	3.93	34.89	800	3.95	34.90	27.73
978	4.24	35.01	1,000	4.25	35.01	27.79
1,466	3.69	34.94	1,500	3.65	34.94	27.79

Station 3604; May 7; latitude 42°20′ N., longitude 50°18′ W.; depth 2743 meters, dynamic height 971.083

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	8.31	34.105	0	8.31	34.105	26.53
25	7.88	34.35	25	7.88	34.35	26.80
50	10.38	35.08	50	10.38	35.08	26.97
75	9.25	34.885	75	9.25	34.885	27.01
100	9.63	35.025	100	9.63	35.025	27.05
150	8.85	34.965	150	8.85	34.965	27.13
200	7.75	34.845	200	7.75	34.845	27.21
300	6.55	31.825	300	6.55	34.825	27.36
384	5.46	34.825	400	5.45	34.83	27.50
556	5.58	34.97	600	5.25	34.96	27.64
714	4.34	34.945	800	4.25	34.95	27.74
912	4.17	34.95	1,000	4.10	34.95	27.76
1,445	3.73	34.945				

STATIONS OCCUPIED IN 1948—Continued

Station 3605; May 7; latitude 42°00′ N., longitude 50°19′ W.; depth 3109 meters, dynamic height 971.204

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	10.39	34.575	0	10.39	34.575	26.57
21	10.86	34.71	25	11.20	34.74	26.56
43	15.36	35.545	50	13.50	35.59	26.76
64	13.48	35.69	75	13.20	35.655	26.87
86	12.94	35.60	100	12.70	35.55	26.90
129	12.30	35.465	150	12.00	35.42	26.94
171	11.72	35.37	200	11.50	35.35	26.98
257	10.99	35.33	300	10.45	35.25	27.09
351	------	35.14	400	8.45	35.095	27.30
532	6.38	35.015	600	5.80	35.00	27.60
716	5.04	34.985	800	4.60	34.97	27.72
904	4.22	34.935	1,000	4.10	34.92	27.74
1,389	3.90	34.955	------	------	------	------

Station 3606; May 7; latitude 41°30′ N., longitude 50°15′ W.; depth 3932 meters, dynamic height 971.364

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	17.32	36.375	0	17.32	36.375	26.52
25	17.27	36.37	25	17.27	36.37	26.525
51	17.28	36.375	50	17.25	36.37	26.525
76	16.96	36.285	75	17.05	36.30	26.515
101	15.65	36.045	100	15.65	36.05	26.65
152	14.55	35.895	150	14.55	35.90	26.78
203	14.16	35.865	200	14.20	35.87	26.83
304	12.98	35.685	300	13.05	35.70	26.94
417	11.14	35.37	400	11.45	35.41	27.03
626	7.18	35.025	600	7.60	35.06	27.40
835	5.01	34.985	800	5.25	34.98	27.65
1,080	4.53	34.99	1,000	4.65	34.99	27.73
1,566	3.94	34.985	------	------	------	------

Station 3607; May 7; latitude 41°01′ N., longitude 50°15′ W.; depth 3658 meters, dynamic height 971.511

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	17.99	36.405	0	17.99	36.405	26.37
25	18.01	36.405	25	18.01	36.405	26.37
50	18.02	36.405	50	18.02	36.405	26.36
75	17.99	36.405	75	17.99	36.405	26.36
100	17.84	36.37	100	17.84	36.37	26.37
150	16.87	36.20	150	16.87	36.20	26.49
200	16.52	36.25	200	16.52	36.25	26.59
300	14.43	35.86	300	14.43	35.86	26.77
409	12.64	35.595	400	12.80	35.62	26.93
622	8.96	35.145	600	9.35	35.18	27.22
840	5.38	34.925	800	5.75	34.94	27.56
1,049	4.73	35.00	1,000	4.80	34.98	27.70
1,566	3.98	34.985	------	------	------	------

Station 3608; May 8; latitude 42°02′ N., longitude 49°32′ W.; depth 3365 meters, dynamic height 970.941

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.58	33.385	0	3.58	33.385	26.57
25	5.87	34.125	25	5.87	34.125	26.90
50	2.04	33.985	50	2.04	33.985	27.18
75	4.48	34.395	75	4.48	34.395	27.28
100	3.28	34.295	100	3.28	34.295	27.32
150	4.49	34.605	150	4.49	34.605	27.43
201	5.00	34.785	200	5.00	34.78	27.52
301	4.25	34.79	300	4.25	34.79	27.61
362	4.26	34.835	400	4.25	34.86	27.67
551	4.15	34.91	600	4.10	34.92	27.74
746	4.10	34.935	800	4.00	34.93	27.75
944	3.71	34.925	1,000	3.70	34.92	27.78
1,457	3.64	34.94	------	------	------	------

Station 3609; May 8; latitude 41°27′ N., longitude 48°54′ W.; depth 2834 meters, dynamic height 970.957

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.29	33.445	0	5.29	33.445	26.43
24	4.13	33.62	25	4.10	33.63	26.71
48	3.33	34.035	50	3.35	34.06	27.12
72	3.74	34.295	75	3.75	34.31	27.29
95	3.43	34.345	100	3.45	34.36	27.35
143	3.94	34.535	150	3.90	34.53	27.44
191	3.28	34.52	200	3.25	34.52	27.50
286	3.24	34.61	300	3.40	34.65	27.59
369	4.33	34.85	400	4.30	34.87	27.67
552	4.22	34.90	600	4.20	34.92	27.73
734	4.23	34.95	800	4.15	34.95	27.75
921	4.02	34.945	1,000	3.95	34.94	27.76
1,395	3.54	34.93	------	------	------	------

Station 3610; May 8; latitude 41°02′ N., longitude 48°29′ W.; depth 2981 meters, dynamic height 971.048

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	9.29	34.07	0	9.29	34.07	26.36
22	10.57	35.045	25	10.65	35.06	26.90
43	11.05	35.215	50	10.90	35.20	26.97
66	10.15	35.125	75	10.10	35.14	27.06
87	10.05	35.16	100	8.70	34.98	27.17
131	5.14	34.37	150	5.25	34.38	27.17
216	5.86	34.50	200	5.80	34.46	27.17
302	5.97	34.80	300	6.00	34.79	27.41
389	4.24	34.71	400	4.25	34.72	27.56
581	4.08	34.855	600	4.10	34.87	27.70
775	4.53	34.98	800	4.50	34.98	27.73
980	4.24	34.985	1,000	4.20	34.98	27.77
510	3.74	34.955	------	------	------	------

Station 3611; May 9; latitude 41°34′ N., longitude 47°20′ W.; depth 3658 meters, dynamic height 971.191

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	13.82	35.70	0	13.82	35.70	26.79
23	13.70	35.725	25	13.70	35.72	26.82
46	13.65	35.73	50	13.65	35.73	26.84
69	13.50	35.72	75	13.45	35.71	26.87
92	12.63	35.61	100	12.55	35.59	26.95
138	11.99	35.505	150	11.65	35.44	27.01
184	10.69	35.265	200	10.45	35.24	27.08
276	9.59	35.145	300	9.15	35.08	27.17
355	7.83	34.885	400	7.05	34.83	27.29
514	5.54	34.79	600	5.25	34.83	27.53
730	4.75	34.905	800	4.55	34.92	27.69
922	4.34	34.93	1,000	4.25	34.93	27.72
1,421	3.84	34.935	------	------	------	------

Station 3612; May 9; latitude 42°01′ N., longitude 47°58′ W.; depth 3658 meters, dynamic height 971.171

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	11.21	35.73	0	14.21	35.73	26.72
27	13.93	35.75	25	13.95	35.75	26.79
52	13.58	35.73	50	13.65	35.73	26.84
99	13.07	35.72	75	13.20	35.72	26.93
104	12.14	35.53	100	12.30	35.55	26.97
157	11.11	35.345	150	11.25	35.37	27.04
209	9.22	35.005	200	9.55	35.09	27.11
311	7.08	34.685	300	7.70	34.78	27.16
361	7.26	34.82	400	6.55	34.78	27.32
514	5.32	34.835	600	4.90	34.84	27.58
729	4.38	34.87	800	4.40	34.90	27.68
922	4.46	34.965	1,000	4.35	34.98	27.75
1,429	3.77	34.94	------	------	------	------

STATIONS OCCUPIED IN 1948—Continued

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t

Station 3613; May 9; latitude 42°23′ N., longitude 48°29′ W.; depth 3429 meters, dynamic height 970.995

Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.59	33.085	0	3.59	33.09	26.32
22	7.68	34.365	25	7.40	34.36	26.88
44	5.21	34.215	50	5.25	34.26	27.08
67	6.94	34.615	75	6.60	34.55	27.14
88	5.45	34.42	100	4.55	34.33	27.21
133	3.26	34.18	150	4.15	34.32	27.25
177	6.43	34.715	200	5.95	34.71	27.35
265	4.66	34.68	300	4.15	34.67	27.53
339	3.63	34.685	400	4.05	34.77	27.62
530	4.69	34.94	600	4.55	34.96	27.72
735	4.28	34.97	800	4.15	34.96	27.76
982	3.86	34.92	1,000	3.85	34.92	27.76
1,290	3.84	34.97				

Station 3614; May 10; latitude 42°40′ N., longitude 49°10′ W.; depth 2611 meters, dynamic height 970.959

Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.14	33.11	0	3.14	33.11	26.38
27	3.24	33.55	25	3.20	33.50	26.69
53	5.45	31.32	50	5.30	34.26	27.08
80	6.25	34.56	75	6.20	34.55	27.19
106	5.60	34.55	100	5.75	34.55	27.25
160	4.77	34.65	150	4.85	34.63	27.42
214	4.46	34.715	200	4.50	34.70	27.51
320	4.31	34.85	300	4.30	34.83	27.64
			400	4.25	34.90	27.70
			600	4.10	34.91	27.73
			800	3.95	34.90	27.73
			1,000	3.80	34.89	27.74

Station 3615; May 10; latitude 43°25′ N., longitude 48°58′ W.; depth 1628 meters, dynamic height 970.981

Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.88	33.635	0	5.88	33.64	26.51
27	5.00	33.77	25	5.00	33.76	26.72
52	6.37	34.38	50	6.30	34.29	26.97
79	5.27	34.45	75	5.40	34.45	27.21
104	4.55	34.50	100	4.60	34.49	27.33
157	5.12	34.59	150	5.10	34.57	27.35
209	4.84	34.69	300	4.25	34.72	27.56
313	4.18	34.73	400	4.90	34.93	27.65
358	4.98	34.92	600	4.20	34.91	27.72
535	4.42	34.92	800	3.75	34.87	27.73
722	3.83	34.87	1,000	3.70	34.87	27.74
906	3.73	34.87				
1,199	3.65	34.86				

Station 3616; May 10; latitude 43°07′ N., longitude 48°13′ W.; depth 3017 meters, dyuamic height 970.978

Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.08	33.42	0	6.08	33.42	26.32
24	7.17	34.135	25	7.15	34.15	26.75
49	5.48	34.385	50	5.45	34.39	27.16
73	5.36	34.41	75	5.40	34.42	27.19
98	6.43	34.64	100	6.50	34.66	27.24
146	7.07	34.87	150	7.05	34.87	27.33
195	6.17	34.81	200	6.05	34.81	27.42
293	4.30	34.73	300	4.35	34.74	27.56
335	4.82	34.885	400	4.80	34.93	27.66
504	4.58	34.95	600	4.35	34.94	27.72
671	4.17	34.935	800	3.95	34.92	27.75
866	3.82	34.915	1,000	3.65	34.91	27.77
1,078	3.66	34.91				

Station 3617; June 10; latitude 46°16.5′ N., longitude 49°02′ W.; depth 66 meters, dynamic height 971.013

Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.69	33.02	0	5.69	33.02	26.04
25	4.56	32.97	25	4.56	32.97	26.13
50	1.60	33.15	50	1.60	33.15	26.55

Station 3618; June 10; latitude 46°07′ N., longitude 48°46′ W.; depth 71 meters, dynamic height 971.019

Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.42	32.90	0	5.42	32.90	25.98
25	4.82	32.89	25	4.82	32.89	26.05
45	0.70	32.91	50	.70	32.93	26.42
60	0.69	32.99				

Station 3619; June 10; latitude 45°58′ N., longitude 48°32′ W.; depth 89 meters, dynamic height 971.018

Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.31	32.91	0	5.31	32.91	26.00
25	5.04	32.91	25	5.04	32.91	26.03
49	−0.18	32.94	50	−0.20	32.94	26.47
74	−0.68	33.05	75	−0.70	33.05	26.59

Station 3620; June 10; latitude 45°47.5′ N., longitude 48°16′ W.; depth 110 meters, dynamic height 970.999

Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.98	32.83	0	4.98	32.83	25.98
23	2.66	32.83	25	2.50	32.84	26.23
46	0.92	33.25	50	0.40	33.28	26.76
69	−1.48	33.37	75	−1.40	33.39	26.88
92	−1.16	33.415	100	−1.05	33.42	26.90

Station 3621; June 10; latitude 45°45.0′ N., longitude 48°14′ W.; depth 172 meters, dynamic height 970.987

Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.28	32.89	0	4.28	32.89	26.11
24	0.75	33.05	25	0.70	33.06	26.52
48	−1.49	33.23	50	−1.50	33.24	26.76
72	−1.47	33.38	75	−1.45	33.40	26.89
96	−0.68	33.46	100	−0.55	33.48	26.93
144	0.28	33.72	150	0.35	33.75	27.10

Station 3622; June 10; latitude 45°41′ N. longitude 48°09′ W.; depth 622 meters, dynamic height 970.958

Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.62	32.76	0	4.62	32.76	25.97
25	2.18	33.24	25	2.18	33.24	26.58
50	−0.41	33.35	50	−0.41	33.35	26.82
74	−0.85	33.48	75	−0.85	33.49	26.94
99	−0.05		100	0.05	33.73	27.11
149	1.98	34.23	150	2.00	34.25	27.39
198	2.53	34.49	200	2.60	34.50	27.54
297	2.96	34.66	300	2.95	34.67	27.65
385	3.30	34.76	400	3.35	34.78	27.70
575	3.54		600	3.60	34.87	27.75

STATIONS OCCUPIED IN 1948—Continued

Station 3623; June 10; latitude 45°32.5′ N., longitude 47°55′ W.; depth 1317 meters, dynamic height 970.897

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.16	33.37	0	6.16	33.37	26.27
23	4.43	33.925	25	4.40	33.97	26.95
47	4.77	34.45	50	4.75	34.46	27.30
70	4.50	34.49	75	4.45	34.50	27.36
94	4.25	34.57	100	4.25	34.60	27.46
140	4.55	34.71	150	4.45	34.73	27.55
187	4.04	34.77	200	4.00	34.77	27.63
281	3.86	34.80	300	3.85	34.81	27.67
474	4.01	34.89	400	4.00	34.86	27.70
568	3.89	34.91	600	3.85	34.91	27.75
758	3.77	34.925	800	3.75	34.93	27.78
951	3.65	34.93	1,000	3.65	34.93	27.79
1,244	3.59	34.925				

Station 3624; June 10; latitude 45°19′ N., longitude 47°24′ W.; depth 2761 meters, dynamic height 970.910

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.40	33.33	0	6.40	33.33	26.21
24	4.26	33.97	25	4.15	33.98	26.98
49	2.24	34.10	50	2.25	34.10	27.25
73	2.61	34.265	75	2.60	34.28	27.37
98	2.66	34.335	100	2.70	34.35	27.41
146	4.27	34.66	150	4.30	34.67	27.52
196	4.49	34.775	200	4.50	34.78	27.58
294	4.36	34.87	300	4.40	34.88	27.67
302	4.39	34.90	400	4.25	34.90	27.70
491	4.10	34.91	600	3.90	34.92	27.76
583	3.90	34.92	800	3.90	34.93	27.77
960	3.86	34.93	1,000	3.85	34.93	27.77
1,432	3.83	34.96				

Station 3625; June 11; latitude 45°19′ N., longitude 46°42′ W.; depth 3109 meters, dynamic height 970.979

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.15	32.86	0	5.15	32.86	25.99
25	1.38	33.05	25	1.38	33.05	26.48
50	-0.91	33.25	50	-0.91	33.25	26.76
75	-0.89	33.39	75	-0.89	33.39	26.87
100	0.03	33.57	100	0.03	33.57	26.98
149	2.02	34.09	150	2.05	34.11	27.28
199	3.29	34.52	200	3.30	34.53	27.51
299	4.38	34.855	300	4.40	34.86	27.65
392	4.66	34.975	400	4.65	34.97	27.72
590	4.02	34.925	600	4.05	34.93	27.75
790	4.30	35.01	800	4.30	35.01	27.78
986	4.06	34.99	1,000	4.05	34.99	27.79
1,478	3.54	34.95				

Station 3626; June 11; latitude 45°19.5′ N., longitude 45°57′ W.; depth 3475 meters, dynamic height 970.935

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.82	33.375	0	6.82	33.37	26.19
21	5.21	33.39	25	4.30	33.40	26.51
43	0.31	33.615	50	0.40	33.69	27.05
64	0.85	33.90	75	3.40	34.245	27.27
86	5.69	34.66	100	5.05	34.64	27.40
128	4.03	34.55	150	4.05	34.61	27.49
170	4.09	34.68	200	4.20	34.76	27.60
256	4.45	34.86	300	4.55	34.91	27.68
383	4.62	34.95	400	4.60	34.95	27.70
573	3.77	34.88	600	3.75	34.88	27.74
762	3.71	34.90	800	3.70	34.91	27.77
956	3.70	34.92	1,000	3.70	34.92	27.78
1,444	3.57	34.94				

Station 3627; June 11; latitude 45°21′ N., longitude 45°12′ W.; depth 4390 meters, dynamic height 970.951

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.10	33.71	0	7.10	33.71	26.41
25	6.29	33.74	25	6.29	33.74	26.54
51	3.68	33.955	50	4.00	33.94	26.96
76	3.05	34.09	75	3.05	34.09	27.17
102	4.31	34.50	100	4.30	34.48	27.37
152	3.64	34.52	150	3.65	34.52	27.46
203	4.49	34.71	200	4.45	34.70	27.52
305	5.22	34.94	300	5.20	34.94	27.62
404	4.78	34.96	400	4.80	34.96	27.69
603	3.89	34.89	600	3.90	34.89	27.73
798	3.76	34.905	800	3.75	34.91	27.76
1,000	3.69	34.93	1,000	3.69	34.93	27.79
1,503	3.58	34.945				

Station 3628; June 11; latitude 44°46.5′ N., longitude 45°12′ W.; depth 4390 meters, dynamic height 971.116

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	13.64	35.635	0	13.64	35.63	26.77
21	13.64	35.64	25	13.65	35.65	26.78
43	13.71	35.76	50	13.70	35.78	26.88
65	13.46	35.80	75	13.50	35.80	26.93
87	13.46	35.80	100	13.30	35.78	26.96
130	12.79	35.70	150	12.40	35.64	27.02
173	11.86	35.55	200	11.20	35.41	27.09
260	9.43	35.15	300	8.55	35.07	27.27
309	8.35	35.055	400	6.85	34.98	27.45
471	5.79	34.94	600	4.35	34.87	27.67
638	4.06	34.85	800	3.60	34.84	27.72
813	3.59	34.835	1,000	3.65	34.86	27.73
1,279	3.74	34.91				

Station 3629; June 12; latitude 44°17′ N., longitude 45°14′ W.; depth 4353 meters, dynamic height 971.080

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	11.27	34.80	0	11.27	34.80	26.60
25	11.53	35.07	25	11.53	35.07	26.77
49	11.45	35.21	50	11.45	35.21	26.88
74	10.73	35.24	75	10.75	35.24	27.03
98	10.10	35.13	100	10.10	35.13	27.06
148	8.78	34.925	150	8.70	34.92	27.13
197	7.65	34.76	200	7.60	34.76	27.17
295	7.11	34.89	300	7.20	34.90	27.36
288	7.01	34.87	400	5.90	34.90	27.51
438	5.50	34.89	600	4.70	34.95	27.69
592	4.72	34.945	800	4.45	34.95	27.72
759	4.49	34.95	1,000	4.20	34.95	27.75
1,212	3.85	34.95				

Station 3630; June 12; latitude 44°23′ N., longitude 45°58′ W.; depth 3932 meters, dynamic height 971.025

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	12.89	35.42	0	12.89	35.42	26.76
27	12.91	35.40	25	12.90	35.40	26.74
52	12.84	35.435	50	12.85	35.43	26.78
79	11.16	35.32	75	11.40	35.33	26.98
105	10.10	35.22	100	10.30	35.24	27.10
157	8.65	35.04	150	8.80	35.06	27.22
210	7.75	34.94	200	7.90	34.96	27.28
315	6.38	34.97	300	6.10	34.95	27.49
305	6.03	34.95	400	5.70	34.99	27.61
503	4.96	34.99	600	4.45	34.97	27.74
731	4.10	34.93	800	4.10	34.94	27.75
965	4.15	34.965	1,000	4.15	34.97	27.77
1,565		34.94				

Station 3631; June 12; latitude 44°29′ N., longitude 46°40′ W.; depth 3896 meters, dynamic height 971.055

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	8.27	33.55	0	8.27	33.55	26.12
27	13.02	34.915	25	13.00	34.91	26.35
54	7.93	34.59	50	8.60	34.62	26.91
81	8.72	34.87	75	8.60	34.83	27.07
107	8.53	34.89	100	8.65	34.89	27.11
162	7.02	34.70	150	7.30	34.73	27.19
216	6.19	34.645	200	6.40	34.65	27.24
323	5.48	34.80	300	5.65	34.77	27.44
414	4.23	34.745	400	4.40	34.75	27.56
628	3.92	34.86	600	3.95	34.85	27.69
848	3.93	34.915	800	3.95	34.90	27.73
1,060	3.96	34.95	1,000	3.95	34.94	27.76
1,597	3.64	34.95				

Station 3632; June 12; latitude 44°36′ N., longitude 47°20′ W.; depth 3749 meters, dynamic height 971.061

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	12.57	35.03	0	12.57	35.03	26.53
23	12.78	35.00	25	12.80	35.00	26.46
46	12.82	35.03	50	12.75	35.01	26.48
69	8.26	34.69	75	8.40	34.74	27.03
93	9.46	34.97	100	9.50	34.99	27.05
138	9.17	35.04	150	8.85	35.00	27.16
184	7.71	34.84	200	7.15	34.80	27.25
277	5.83	34.71	300	5.60	34.74	27.42
393	5.16	34.885	400	5.15	34.89	27.59
595	4.01	34.86	600	4.00	34.86	27.70
799	3.83	34.89	800	3.85	34.89	27.73
999	3.68	34.91	1,000	3.70	34.91	27.77
1,500	3.60	34.93				

Station 3633; June 12; latitude 44°43′ N., longitude 47°58′ W.; depth 3475 meters, dynamic height 970.965

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.79	32.825	0	4.79	32.825	26.00
23	2.61	33.06	25	2.50	33.07	26.41
46	0.88	33.315	50	0.60	33.36	26.77
68	0.09	33.57	75	0.10	33.63	27.02
91	0.16	33.685	100	0.75	33.73	27.07
136	3.09	34.27	150	3.15	34.37	27.39
181	3.21	34.58	200	3.45	34.60	27.54
272	4.12	34.795	300	4.00	34.81	27.66
387	3.44	34.80	400	3.45	34.81	27.71
575	3.90	34.88	600	3.90	34.89	27.73
758	3.91	34.92	800	3.90	34.92	27.76
952	3.89	34.93	1,000	3.85	34.93	27.77
1,444	3.66	34.94				

Station 3634; June 13; latitude 44°48′ N., longitude 48°31′ W.; depth 2524 meters, dynamic height 970.915

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.39	33.075	0	5.39	33.075	26.13
21	4.23	33.68	25	3.85	33.75	26.83
42	2.03	33.96	50	2.40	34.00	27.16
64	3.35	34.01	75	3.85	34.23	27.21
85	4.01	34.40	100	3.85	34.44	27.38
127	3.60	34.48	150	4.15	34.65	27.51
169	4.56	34.78	200	4.55	34.84	27.62
254	4.43	34.895	300	4.00	34.85	27.69
346	3.62	34.79	400	3.70	34.82	27.70
527	3.96	34.89	600	3.90	34.90	27.74
713	3.80	34.905	800	3.70	34.91	27.77
903	3.66	34.91	1,000	3.65	34.91	27.77
1,405	3.59	34.93				

Station 3635; June 13; latitude 44°50.5′ N., longitude 48°49′ W.; depth 1609 meters, dynamic height 971.012

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.40	32.82	0	4.40	32.82	26.05
26	1.99	33.005	25	2.00	33.00	26.40
50	-1.39	33.305	50	-1.39	33.305	26.81
76	-1.31	33.435	75	-1.30	33.43	26.92
100	-0.49	33.63	100	-0.48	33.63	27.05
151	1.19	34.03	150	1.15	34.02	27.27
202	1.82	34.21	200	1.75	34.20	27.37
302	3.34	34.65	300	3.35	34.64	27.58
361	3.23	34.71	400	3.35	34.73	27.66
541	3.64	34.82	600	3.70	34.84	27.71
721	3.72	34.86	800	3.80	34.88	27.74
901	3.90	34.91	1,000	3.90	34.91	27.75
1,352	3.93	34.92				

Station 3636; June 13; latitude 44°51.5′ N., longitude 49°02′ W.; depth 635 meters, dynamic height 971.054

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.89	32.79	0	4.89	32.79	25.96
24	0.96	32.955	25	0.90	32.96	26.44
49	-0.65	33.105	50	-0.70	33.11	26.63
73	-1.30	33.21	75	-1.35	33.22	26.75
97	-1.37	33.30	100	-1.35	33.31	26.80
146	-1.16	33.47	150	-1.05	33.48	26.95
194	1.76	34.11	200	1.85	34.15	27.32
291	2.89	34.56	300	2.95	34.58	27.58
376	3.36	34.72	400	3.45	34.75	27.66
565	3.72	34.83	600	3.75	34.83	27.70

Station 3637; June 13; latitude 44°52′ N., longitude 49°10′ W.; depth 89 meters, dynamic height 971.047

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.27	32.775	0	5.27	32.77	25.91
25	1.74	32.88	25	1.74	32.88	26.32
50	-1.14	33.23	50	-1.14	33.23	26.75
75	-1.03	33.32	75	-1.03	33.32	26.81

Station 3638; June 13; latitude 44°52.5′ N., longitude 49°30′ W.; depth 64 meters, dynamic height 971.050

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.77	32.81	0	5.77	32.81	25.88
23	2.30	32.92	25	2.15	32.93	26.33
46	-0.04	33.03	50	-0.20	33.05	26.57

Station 3639; June 13; latitude 44°12′ N., longitude 49°26′ W.; depth 44 meters, dynamic height 971.091

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.97	33.00	0	3.97	33.00	26.22
22	3.15	33.01	25	3.15	33.01	26.32
32	3.16	32.985				

Station 3640; June 13; latitude 44°07′ N., longitude 49°18′ W.; depth 102 meters, dynamic height 971.092

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.60	32.865	0	5.60	32.86	25.94
23	1.76	32.97	25	1.50	32.98	26.41
47	0.39	33.09	50	0.30	33.09	26.58
75	-0.14	33.01	75	-0.15	33.01	26.54

STATIONS OCCUPIED IN 1948—Continued

Station 3641; June 13; latitude 44°07′ N., longitude 49°12′ W.; depth 169 meters, dynamic height 971.093

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.95	32.81	0	4.95	32.81	25.98
24	2.98	32.855	25	2.90	32.86	26.22
47	0.00	32.97	50	-0.10	32.99	26.51
71	-0.45	33.075	75	-0.50	33.08	26.60
95	-0.63	33.07	100	-0.60	33.10	26.61
142	1.02	33.695	150	1.40	33.76	27.04

Station 3642; June 13; latitude 44°03′ N., longitude 49°06′ W.; depth 622 meters, dynamic height 971.061

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.96	32.79	0	4.96	32.79	25.96
24	1.42	32.93	25	1.30	32.93	26.39
48	-0.74	33.14	50	-0.80	33.16	26.67
72	-1.08	33.28	75	-1.15	33.29	26.79
96	-1.21	33.29	100	-1.20	33.31	26.81
144	1.38	33.76	150	1.80	33.84	27.07
193	4.88	34.385	200	4.85	34.40	27.24
289	4.09	34.61	300	4.10	34.63	27.51
382	4.06	34.77	400	4.05	34.78	27.63
581	3.82	34.81	600	3.80	34.81	27.68

Station 3643; June 14; latitude 44°01′ N., longitude 48°47′ W.; depth 1646 meters, dynamic height 971.059

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.21	32.935	0	6.21	32.935	25.91
24	0.37	32.965	25	0.35	32.97	26.47
48	1.19	33.165	50	1.20	33.17	26.59
72	1.09	33.22	75	1.05	33.25	26.67
96	1.08	33.475	100	1.60	33.57	26.88
144	7.67	34.73	150	7.40	34.70	27.15
192	3.90	34.25	200	3.90	34.26	27.23
288	3.99	34.56	300	4.05	34.60	27.48
374	4.17	34.78	400	4.15	34.80	27.63
561	3.84	34.85	600	3.85	34.86	27.71
749	3.85	34.89	800	3.80	34.90	27.75
936	3.72	34.91	1,000	3.70	34.91	27.77
1,403	------	34.915	------	------	------	------

Station 3644; June 14; latitude 43°59.5′ N., longitude 48°30′ W.; depth 2232 meters, dynamic height 971.070

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	13.75	34.88	0	13.75	34.88	26.17
24	13.78	34.955	25	13.70	34.96	26.24
49	------	35.26	50	11.60	35.27	26.90
73	------	35.36	75	11.40	35.36	27.01
97	------	35.245	100	10.30	35.23	27.10
145	8.92	34.97	150	8.80	34.95	27.13
194	7.28	34.735	200	7.15	34.72	27.20
291	5.52	31.66	300	5.45	34.67	27.38
382	4.70	31.76	400	4.70	34.78	27.56
569	4.64	34.94	600	4.60	34.95	27.70
755	4.32	34.955	800	4.20	34.95	27.75
948	3.97	34.95	1,000	3.90	34.95	27.78
1,437	3.68	31.91	------	------	------	------

Station 3645; June 14; latitude 43°53.5′ N., longitude 47°56′ W.; depth 3713 meters, dynamic height 971.161

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	16.38	35.68	0	16.38	35.68	26.20
23	16.41	35.68	25	16.35	35.68	26.21
44	14.00	35.70	50	13.80	35.70	26.79
67	13.38	35.675	75	13.20	35.66	26.88
89	12.93	35.63	100	12.80	35.61	26.93
134	12.30	35.56	150	11.95	35.52	27.03
178	11.34	35.40	200	10.65	35.28	27.08
267	9.29	35.12	300	8.45	35.02	27.24
212	10.28	35.20	400	6.95	34.95	27.41
317	7.97	34.975	600	4.95	34.91	27.63
423	6.62	34.945	800	4.30	34.93	27.72
544	5.28	34.91	1,000	4.05	34.93	27.75
872	4.16	34.94	------	------	------	------

Station 3646; June 14; latitude 43°47.5′ N., longitude 47°20′ W.; depth 4024 meters, dynamic height 971.284

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	14.24	35.675	0	14.24	35.675	26.67
19	14.47	35.68	25	14.55	35.75	26.66
36	14.74	35.865	50	14.95	35.99	26.77
55	14.97	36.035	75	14.75	36.04	26.85
73	14.74	36.04	100	14.65	36.04	26.87
110	14.62	36.035	150	14.25	35.95	26.89
146	14.36	35.96	200	13.25	35.77	26.96
219	12.97	35.72	300	12.05	35.59	27.06
388	11.12	35.44	400	10.95	35.41	27.13
580	7.20	34.99	600	6.95	34.97	27.43
775	5.12	34.95	800	5.00	34.95	27.66
971	4.49	34.97	1,000	4.45	34.97	27.74
1,468	3.12	34.93	------	------	------	------

Station 3647; June 14; latitude 43°33′ N., longitude 46°36′ W.; depth 4353 meters, dynamic height 971.220

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	14.35	35.70	0	14.35	35.70	26.67
19	14.48	35.785	25	14.55	35.81	26.71
45	14.69	35.89	50	14.65	35.90	26.76
67	14.55	35.94	75	14.50	35.96	26.85
89	14.44	35.98	100	14.15	35.93	26.90
134	12.87	35.63	150	12.60	35.59	26.95
178	12.23	35.525	200	11.80	35.46	27.01
267	10.46	35.26	300	9.75	35.18	27.16
321	9.20	35.13	400	8.40	35.05	27.27
481	7.61	35.00	600	6.10	34.96	27.53
641	5.51	34.955	800	4.70	34.96	27.70
745	4.74	34.98	1,000	4.35	34.93	27.72
898	4.69	31.93	------	------	------	------

Station 3648; June 15; latitude 43°22′ N., longitude 45°52′ W.; depth 4609 meters, dynamic height 971.207

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	10.46	34.00	0	10.46	31.00	26.10
28	11.86	34.59	25	11.80	34.53	26.28
55	11.37	35.03	50	11.40	34.97	26.70
82	11.29	35.21	75	11.30	35.16	26.87
110	11.74	35.415	100	11.55	35.36	26.98
165	10.61	35.25	150	11.10	35.33	27.04
219	6.80	34.54	200	8.05	34.80	27.13
329	4.69	34.295	300	4.75	34.29	27.16
274	4.95	34.31	400	6.40	34.67	27.26
389	6.37	31.625	600	5.00	34.83	27.57
490	6.39	34.935	800	4.60	34.93	27.69
604	4.98	31.83	1,000	4.40	34.95	27.72
875	4.52	34.96	------	------	------	------

STATIONS OCCUPIED IN 1948—Continued

Station 3649; June 15; latitude 43°15′ N., longitude 45°14′ W.; depth 4663 meters, dynamic height 971.323

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	17.50	35.93	0	17.50	35.93	26.13
26	17.45	35.94	25	17.45	35.94	26.15
51	17.44	36.03	50	17.45	36.03	26.22
77	14.86	35.845	75	15.00	35.85	26.64
102	14.24	35.79	100	14.35	35.80	26.65
153	13.41	35.71	150	13.45	35.72	26.88
204	13.09	35.675	200	13.10	35.68	26.92
306	11.28	35.38	300	11.35	35.44	27.07
333	10.68	35.41	400	9.70	35.25	27.22
499	8.32	35.07	600	6.70	34.94	27.43
666	5.38	34.87	800	4.95	34.92	27.64
834	4.85	34.935	1,000	4.30	34.94	27.72
1,256	3.83	34.92				

Station 3650; June 15; latitude 42°46′ N., longitude 45°37′ W.; depth 4718 meters, dynamic height 971.576

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	18.14	36.28	0	18.14	36.28	26.24
27	18.10	36.29	25	18.10	36.29	26.25
53	17.09	36.29	50	17.20	36.29	26.48
80	16.42	36.255	75	16.50	36.26	26.62
107	16.15	36.21	100	16.25	36.22	26.65
161	15.30	36.08	150	15.45	36.10	26.71
214	14.88	36.04	200	14.95	36.04	26.82
321	14.72	36.05	300	14.75	36.05	26.86
411	14.52	36.035	400	14.60	36.04	26.88
615	11.93	35.53	600	12.20	35.57	27.01
820	8.05	35.10	800	8.40	35.13	27.34
1,025	5.59	35.00	1,000	5.80	35.01	27.61
1,538	4.16	34.98				

Station 3651; June 16; latitude 42°21.5′ N., longitude 46°18′ W.; depth 4518 meters, dynamic height 971.505

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	18.54	36.23	0	18.54	36.23	26.10
25	18.37	36.245	25	18.37	36.25	26.16
51	16.89	36.25	50	16.90	36.25	26.52
76	16.67	36.28	75	16.65	36.28	26.60
102	15.83	36.11	100	15.90	36.12	26.65
152	15.23	36.055	150	15.30	36.06	26.74
203	14.40	35.915	200	14.40	35.92	26.83
305	14.55	36.025	300	14.55	36.02	26.88
373	14.62	36.035	400	14.50	36.00	26.88
561	11.42	35.46	600	10.60	35.35	27.14
749	7.55	35.07	800	6.80	35.04	27.50
937	5.51	35.00	1,000	5.25	35.00	27.67
1,413	4.33	35.00				

Station 3652; June 16; latitude 42°37.5′ N., longitude 46°50′ W.; depth 4170 meters, dynamic height 971.289

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	16.99	35.24	0	16.99	35.24	25.72
25	17.99	35.96	25	17.99	35.96	26.03
51	16.34	36.07	50	16.40	36.07	26.50
76	15.29	35.945	75	15.30	35.95	26.65
102	14.14	35.78	100	14.25	35.80	26.77
152	13.20	35.655	150	13.25	35.66	26.87
203	12.58	35.57	200	12.60	35.58	26.94
305	11.42	35.43	300	11.50	35.44	27.04
341	9.99	35.36	400	9.10	35.23	27.31
512	7.47	35.00	600	6.20	34.92	27.49
683	5.03	34.89	800	4.75	34.93	27.67
852	4.64	34.95	1,000	4.65	34.97	27.72
1,281	5.64	34.95				

Station 3653; June 16; latitude 42°53′ N., longitude 47°28′ W.; depth 4101 meters, dynamic height 971.055

Observed values			Scaled values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	13.10	33.81	0	13.10	33.81	25.48
26	11.22	33.95	25	11.25	33.95	25.93
51	7.74	34.485	50	7.90	34.48	26.91
78	5.73	34.365	75	5.90	34.38	27.10
103	4.41	34.31	100	4.50	34.31	27.21
155	5.52	34.62	150	5.50	34.59	27.31
207	5.43	34.725	200	5.45	34.72	27.42
310	5.07	34.73	300	5.10	34.73	27.48
428	5.25	34.86	400	5.20	34.83	27.54
622	4.80	34.98	600	4.85	34.97	27.69
804	4.21	34.93	800	4.25	34.93	27.73
1,008	3.96	34.95	1,000	3.95	34.95	27.77
1,524	3.63	34.88				

Station 3654; June 16; latitude 43°09.5′ N., longitude 48°13′ W.; depth 3036 meters, dynamic height 971.008

Observed values			Scaled values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	12.26	33.78	0	12.26	33.78	25.62
27	9.31	34.12	25	9.45	34.09	26.35
53	6.09	34.36	50	6.40	34.32	26.99
79	6.94	34.68	75	6.85	34.68	27.21
105	6.32	34.625	100	6.45	34.63	27.23
159	5.44	34.60	150	5.50	34.59	27.31
212	5.56	34.77	200	5.55	34.73	27.42
317	5.15	34.88	300	5.20	34.86	27.56
359	5.30	34.96	400	5.15	34.95	27.64
547	4.38	34.92	600	4.25	34.91	27.71
742	4.08	34.91	800	4.05	34.92	27.74
939	3.94	34.92	1,000	3.90	34.94	27.77
1,459	3.73	34.95				

Station 3655; June 17; latitude 43°19.5′ N., longitude 48°50′ W.; depth 2341 meters, dynamic height 971.072

Observed values			Scaled values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	13.47	34.64	0	13.47	34.64	26.04
26	12.46	34.65	25	12.55	34.65	26.23
52	7.55	34.34	50	8.05	34.35	26.78
78	9.42	35.01	75	9.35	35.00	27.08
103	8.79	34.92	100	8.90	34.93	27.10
156	8.01	34.84	150	8.05	34.84	27.16
208	7.62	34.83	200	7.65	34.83	27.22
311	6.92	34.95	300	6.85	34.95	27.42
292	6.67	34.955	400	5.55	34.93	27.58
446	4.91	34.915	600	4.65	34.93	27.69
606	4.58	34.935	800	4.10	34.92	27.74
776	4.12	34.92	1,000	3.90	34.91	27.75
1,231	3.77	34.90				

Station 3656; June 17; latitude 42°38.5′ N., longitude 49°08′ W.; depth 2378 meters, dynamic height 970.968

Observed values			Scaled values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	10.31	35.35	0	10.31	33.35	25.63
26	6.12	33.88	25	6.15	33.87	26.67
54	4.61	34.235	50	4.75	34.19	27.08
80	4.05	34.27	75	4.10	34.26	27.21
106	3.82	34.53	100	3.80	34.48	27.42
160	4.46	34.62	150	4.35	34.60	27.45
214	4.52	34.70	200	4.50	34.68	27.50
320	4.85	34.87	300	4.80	34.84	27.59
405	4.57	34.88	400	4.60	34.88	27.65
611	4.37	34.95	600	4.40	34.94	27.71
819	3.89	34.92	800	3.95	34.92	27.75
1,030	3.80	34.93	1,000	3.80	34.93	27.78
1,565	3.52	34.93				

Station 3657; June 17; latitude 42°19′ N., longitude 48°26′ W.; depth 3292 meters, dynamic height 971.126

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	16.32	34.77	0	16.32	34.77	25.53
26	14.89	35.66	25	14.90	35.66	26.52
51	13.45	35.60	50	13.50	35.60	26.77
76	12.09	35.48	75	12.10	35.48	26.97
101	12.14	35.47	100	12.15	35.47	26.95
153	11.23	35.165	150	11.30	35.17	26.88
204	10.08	35.37	200	10.15	35.36	27.23
305	7.81	34.99	300	7.90	35.01	27.32
419	6.10	34.94	400	6.30	34.94	27.48
630	4.62	34.90	600	4.70	34.90	27.65
846	4.39	34.99	800	4.45	34.97	27.74
1,065	4.18	34.99	1,000	4.25	34.99	27.77
1,608	3.45	34.96				

Station 3658; June 17–18; latitude 41°58′ N., longitude 47°46′ W.; depth 3731 meters, dynamic height 971.284

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	18.85	35.93	0	18.85	35.93	25.75
25	18.63	35.90	25	18.63	35.90	25.83
50	16.10	35.88	50	16.10	35.88	26.42
75	15.26	35.92	75	15.26	35.92	26.65
100	15.01	35.975	100	15.04	35.975	26.73
150	13.53	35.69	150	13.53	35.69	26.83
200	12.65	35.57	200	12.65	35.57	26.92
300	10.22	35.20	300	10.22	35.20	27.09
352	9.78	35.265	400	8.90	35.17	27.29
527	6.58	34.92	600	5.50	34.89	27.55
704	4.64	34.87	800	4.45	34.88	27.67
905	4.22	34.89	1,000	4.15	34.89	27.70
1,456	3.90	34.87				

Station 3659; July 6; latitude 50°01′ N., longitude 48°58′ W.; depth 1866 meters, dynamic height 970.819

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.06	34.30	0	7.06	34.30	26.88
24	6.99	34.32	25	6.90	34.32	26.92
48	4.20	34.61	50	4.10	34.63	27.51
71	3.67	34.76	75	3.60	34.77	27.67
95	3.46	34.815	100	3.45	34.82	27.72
143	3.38	34.84	150	3.40	34.845	27.75
191	3.38	34.87	200	3.35	34.87	27.77
286	3.35	34.87	300	3.25	34.87	27.77
363	3.34	34.86	400	3.35	34.87	27.77
548	3.38	34.89	600	3.40	34.89	27.78
736	3.42	34.90	800	3.40	34.90	27.79
923	3.38	34.89	1,000	3.35	34.90	27.79
1,395	3.40	34.93	1,500	3.40	34.93	27.82

Station 3660; July 6; latitude 49°51′ N., longitude 49°28′ W.; depth 1390 meters, dynamic height 970.832

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.92	33.46	0	5.92	33.46	26.37
16	5.90	33.47	25	3.80	33.87	26.93
33	2.52	34.325	50	3.05	34.66	27.63
49	3.07	34.65	75	3.10	34.71	27.67
65	3.05	34.69	100	3.25	34.76	27.69
98	3.21	34.75	150	3.50	34.84	27.73
130	3.51	34.83	200	3.40	34.85	27.75
195	3.41	34.85	300	3.35	34.86	27.76
351	3.37	34.86	400	3.35	34.86	27.76
529	3.37	34.87	600	3.35	34.87	27.77
708	3.36	34.87	800	3.35	34.88	27.78
891	3.38	34.885	1,000	3.40	34.89	27.78
1,225	3.45	34.905				

Station 3661; July 6; latitude 49°40′ N., longitude 50°00′ W.; depth 640 meters, dynamic height 970.842

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.87	33.04	0	4.87	33.04	26.16
22	4.44	33.70	25	4.30	33.81	26.83
45	2.32	34.43	50	2.40	34.49	27.55
67	3.05	34.635	75	3.00	34.63	27.62
89	2.80	34.61	100	2.90	34.67	27.66
134	3.24	34.76	150	3.35	34.78	27.70
178	3.43	34.80	200	3.40	34.81	27.72
267	3.38	34.84	300	3.40	34.85	27.75
318	3.42	34.865	400	3.40	34.87	27.77
499	3.36	34.87	600	3.35	34.88	27.78

Station 3662; July 6; latitude 49°29′ N., longitude 50°32′ W.; depth 295 meters, dynamic height 970.875

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.70	32.93	0	4.70	32.93	26.09
21	4.71	33.92	25	3.80	33.91	26.96
42	-0.41	33.78	50	0.00	33.98	27.31
64	1.23	34.03	75	1.30	34.09	27.31
85	1.29	34.13	100	1.55	34.23	27.41
127	2.06	34.41	150	2.35	34.50	27.56
169	2.58	34.54	200	2.80	34.62	27.62
253	3.0[illegible]	34.75	300	3.15	34.83	27.76

Station 3663; July 7; latitude 49°20′ N., longitude 51°02′ W.; depth 320 meters, dynamic height 970.908

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.08	33.18	0	5.08	33.18	26.25
22	5.10	33.05	25	4.25	33.07	26.24
44	-0.58	33.53	50	-0.55	33.62	27.04
66	-0.13	33.81	75	0.10	33.90	27.23
88	0.48	33.99	100	1.05	34.09	27.33
132	2.09	34.35	150	2.30	34.42	27.51
177	2.51	34.52	200	2.70	34.58	27.60
261	2.90	34.70	300	2.95	34.74	27.70

Station 3664; July 7; latitude 49°10′ N., longitude 51°31′ W.; depth 295 meters, dynamic height 971.032

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.94	32.45	0	4.94	32.45	25.69
23	4.60	32.49	25	4.50	32.50	25.77
46	2.12	32.84	50	1.60	32.90	26.34
69	-0.21	33.09	75	-0.35	33.13	26.63
91	-0.67	33.22	100	-0.75	33.26	26.75
137	-1.10	33.43	150	-1.00	33.51	26.97
183	-0.45	33.72	200	0.10	33.84	27.18
247	2.10	34.32	300	3.10	34.68	27.65

Station 3665; July 7; latitude 49°04.5′ N., longitude 51°51′ W.; depth 302 meters, dynamic height 970.974

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.77	32.51	0	5.77	32.51	25.64
24	5.37	32.68	25	5.20	32.71	25.86
48	-0.58	33.23	50	-0.80	33.25	26.75
71	-1.29	33.33	75	-1.30	33.36	26.85
95	-0.99	33.515	100	-0.90	33.54	26.99
143	0.14	33.82	150	0.35	33.88	27.21
190	1.50	34.235	200	1.75	34.30	27.45
266	2.94	34.55	300	3.30	34.66	27.61

Station 3666; July 7; latitude 49°00′ N., longitude 52°04′ W.; depth 289 meters, dynamic height 970.995

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.52	32.54	0	5.52	32.54	25.69
24	2.06	32.79	25	1.95	32.81	26.25
49	-1.33	33.01	50	-1.40	33.02	26.59
73	-1.46	33.11	75	-1.45	33.12	26.66
97	-1.43	33.06	100	-1.35	33.31	26.81
146	-0.39	33.72	150	-0.30	33.74	27.12
194	0.98	34.045	200	1.10	34.08	27.33
267	2.86	34.51	300	3.50	34.69	27.61

Station 3667; July 7; latitude 48°54.5′ N., longitude 52°23.5′ W.; depth 352 meters, dynamic height 971.071

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.51	32.35	0	4.51	32.35	25.66
24	2.13	32.69	25	2.10	32.70	26.14
49	-0.71	32.99	50	-0.75	33.00	26.55
73	-1.48	33.06	75	-1.50	33.07	26.62
98	-1.55	33.105	100	-1.50	33.11	26.65
147	-1.49	33.105	150	-1.50	33.12	26.66
195	-1.37	33.32	200	-1.35	33.36	26.85
293	1.43	34.20	300	1.65	34.25	27.42

Station 3668; July 7; latitude 48°49.5′ N., longitude 52°42′ W.; depth 220 meters, dynamic height 971.067

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.56	32.24	0	5.56	32.24	25.44
24	2.38	32.81	25	2.30	32.82	26.24
48	0.33	32.92	50	0.15	32.93	26.45
71	-1.25	33.07	75	-1.30	33.08	26.63
95	-1.38	33.11	100	-1.40	33.12	26.66
142	-1.37	33.23	150	-1.35	33.24	26.76
190	-1.31	33.31	200	-1.30	33.33	26.83

Station 3669; July 7; latitude 48°45.5′ N., longitude 52°50′ W.; depth 170 meters, dynamic height 971.069

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.99	32.49	0	3.99	32.49	25.82
24	2.07	32.77	25	2.09	32.78	26.21
48	-0.75	32.97	50	-0.85	32.98	26.53
72	-1.22	32.985	75	-1.25	32.99	26.55
95	-1.40	33.06	100	-1.45	33.07	26.62
143	-1.59		150	-1.60	33.11	26.66

Station 3670; July 7; latitude 48°43.5′ N., longitude 52°58′ W.; depth 98 meters, dynamic height 971.102

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.83	31.63	0	6.83	31.63	24.81
24	3.67	32.41	25	3.40	32.42	25.82
47	0.30	32.67	50	0.10	32.69	26.27
71	-0.56	32.91	75	-0.65	32.93	26.49

Station 3671; July 7; latitude 48°38′ N., longitude 52°46′ W.; depth 146 meters, dynamic height 971.077

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.37	32.31	0	5.37	32.31	25.53
22	1.48	32.66	25	1.30	32.69	26.20
43	0.23	32.85	50	-0.20	32.88	26.43
65	-1.15	32.94	75	-1.35	32.98	26.55
87	-1.50	33.02	100	-1.45	33.03	26.59
117	-1.48	33.04	150	-1.50	33.06	26.61

Station 3672; July 7; latitude 48°32′ N., longitude 52°34′ W.; depth 253 meters, dynamic height 971.068

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.04	32.02	0	6.04	32.02	25.22
24	1.38	32.59	25	1.30	32.60	26.13
47	-0.28	32.86	50	-0.45	32.88	26.44
71	-1.19	32.95	75	-1.25	32.96	26.53
95	-1.43	33.02	100	-1.45	33.03	26.59
142	-1.56	33.09	150	-1.55	33.10	26.65
189	-1.61	33.17	200	-1.60	33.20	26.73
222	-1.47	33.31	250	-1.30	33.48	26.96

Station 3673; July 8; latitude 48°24′ N., longitude 52°08′ W.; depth 192 meters, dynamic height 971.021

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.50	32.29	0	5.50	32.29	25.49
23	2.25	32.64	25	1.50	32.68	26.17
46	-1.38	33.03	50	-1.40	33.06	26.61
69	-1.54	33.11	75	-1.55	33.12	26.67
92	-1.57	33.13	100	-1.50	33.16	26.69
138	-1.08	33.41	150	-0.95	33.50	26.96

Station 3674; July 8; latitude 48°17.5′ N., longitude 51°55′ W.; depth 178 meters, dynamic height 971.032

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.28	32.17	0	6.28	32.17	25.31
24	2.71	32.68	25	2.60	32.70	26.10
48	-1.06	33.06	50	-1.10	33.07	26.61
71	-1.28	33.13	75	-1.30	33.14	26.67
95	-1.58	33.19	100	-1.60	33.20	26.73
143	-1.27	33.30	150	-1.20	33.36	26.85
157	-1.09	33.49	------	------	------	------

Station 3675; July 8; latitude 48°10′ N., longitude 51°36′ W.; depth 183 meters, dynamic height 971.034

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.01	32.41	0	6.01	32.41	25.54
23	2.90	32.58	25	2.70	32.61	26.03
46	-1.26	33.03	50	-1.45	33.04	26.60
69	-1.53	33.07	75	-1.55	33.08	26.64
92	-1.55	33.14	100	-1.55	33.16	26.70
138	-1.39	33.30	150	-1.35	33.37	26.85

Station 3676; July 8; latitude 48°03′ N., longitude 51°14′ W.; depth 172 meters, dynamic height 971.037

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.92	32.36	0	5.92	32.36	25.51
24	4.03	32.59	25	4.00	32.60	25.91
47	1.19	32.82	50	0.75	32.87	26.37
72	-0.88	33.21	75	-0.95	33.22	26.74
95	-1.32	33.32	100	-1.30	33.33	26.83
143	-1.09	33.36	150	-1.05	33.37	26.85

Station 3677; July 8; latitude 47°53′ N., longitude 50°58′ W.; depth 123 meters, dynamic height 971.041

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.34	32.33	0	6.34	32.33	25.43
25	4.52	32.59	25	4.51	32.59	25.85
50	0.10	32.97	50	0.09	32.97	26.49
75	-1.16	33.13	75	-1.17	33.13	26.67
99	-1.37	33.23	100	-1.40	33.24	26.76

STATIONS OCCUPIED IN 1948—Continued

Station 3678; July 8; latitude 47°44.5′ N., longitude 50°40′ W.; depth 128 meters, dynamic height 971.035

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.19	32.39	0	6.19	32.39	25.49
27	4.05	32.60	25	4.20	32.59	25.88
53	-0.50	33.05	50	-0.15	33.01	26.54
79	-1.30	33.22	75	-1.30	33.21	26.73
105	-1.22	33.39	100	-1.25	33.36	26.85

Station 3679; July 9; latitude 47°38′ N., longitude 50°32′ W.; depth 117 meters, dynamic height 971.044

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.57	32.43	0	6.57	32.43	25.48
27	3.92	32.61	25	4.15	32.60	25.89
53	0.27	32.89	50	0.65	32.86	26.37
80	-1.07	33.08	75	-0.90	33.05	26.59
106	-1.33	33.28	100	-1.30	33.24	26.75

Station 3680; July 9; latitude 47°24′ N., longitude 50°01′ W.; depth 88 meters, dynamic height 971.024

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.30	32.61	0	6.30	32.61	25.65
25	4.71	32.68	25	4.71	32.68	25.88
50	0.13	32.93	50	0.13	32.93	26.45
75	-0.41	32.96	75	-0.41	32.96	26.50

Station 3681; July 9; latitude 47°43′ N., longitude 49°50′ W.; depth 115 meters, dynamic height 971.008

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.47	32.51	0	6.47	32.51	25.54
24	4.41	32.73	25	4.20	32.74	25.99
48	-0.23	32.99	50	-0.40	33.03	26.55
72	-0.93	33.38	75	-0.95	33.41	26.88
96	-0.52	33.65	100	-0.45	33.71	27.10

Station 3682; July 9; latitude 48°00.5′ N., longitude 49°45′ W.; depth 187 meters, dynamic height 971.008

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.60	32.59	0	5.60	32.59	25.71
24	3.71	32.67	25	3.60	32.68	26.00
48	-1.42	33.10	50	-1.40	33.11	26.64
71	-1.38	33.17	75	-1.40	33.18	26.70
95	-1.37	33.25	100	-1.35	33.29	26.79
143	-0.37	33.73	150	-0.15	33.81	27.17

Station 3683; July 9; latitude 48°13′ N., longitude 49°42′ W.; depth 220 meters, dynamic height 970.986

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.60	32.65	0	5.60	32.65	25.76
25	2.53	33.01	25	2.53	33.01	26.36
50	-1.47	33.10	50	-1.47	33.10	26.63
75	-1.05	33.32	75	-1.05	33.32	26.80
100	-0.89	33.52	100	-0.89	33.52	26.96
150	0.54	34.00	150	0.56	34.00	27.28
200	1.82	34.31	200	1.82	34.31	27.45

Station 3684; July 9; latitude 48°31′ N., longitude 49°30′ W.; depth 640 meters, dynamic height 970.952

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.74	32.81	0	5.74	32.81	25.87
24	4.53	33.12	25	4.40	33.13	26.27
49	-0.77	33.43	50	-0.80	33.45	26.90
73	-0.70	33.61	75	-0.70	33.62	27.04
98	-0.38	33.83	100	-0.30	33.82	27.18
147	1.27	34.13	150	1.35	34.15	27.35
195	2.25	34.42	200	2.30	34.44	27.51
293	3.07	34.73	300	3.10	34.74	27.68
385	3.28	34.81	400	3.30	34.82	27.73
576	3.38	34.86	600	3.40	34.86	27.75

Station 3685; July 9; latitude 48°49′ N., longitude 49°28′ W.; depth 1344 meters, dynamic height 970.881

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.81	32.96	0	5.81	32.96	25.99
25	4.24	33.27	25	4.24	33.27	26.40
49	2.08	34.38	50	2.10	34.40	27.50
74	2.48	34.52	75	2.50	34.52	27.57
99	2.57	34.57	100	2.60	34.57	27.60
147	2.95	34.67	150	3.00	34.68	27.66
197	3.35	34.77	200	3.35	34.78	27.70
296	3.52	34.81	300	3.50	34.82	27.72
390	3.50	34.84	400	3.50	34.84	27.73
581	3.48	34.87	600	3.50	34.87	27.76
768	3.44	34.87	800	3.45	34.87	27.76
962	3.43	34.875	1,000	3.45	34.88	27.77
1,254	3.54	34.92	--------	------	------	------

Station 3686; July 9; latitude 49°13.5′ N., longitude 49°18′ W.; depth 1518 meters, dynamic height 970.862

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.98	33.17	0	5.98	33.17	26.13
24	2.24	34.12	25	2.20	34.14	27.29
49	2.11	34.41	50	2.10	34.42	27.52
73	2.39	34.49	75	2.40	34.50	27.56
97	2.49	34.53	100	2.55	34.54	27.58
146	2.71	34.65	150	2.75	34.66	27.66
195	3.07	34.70	200	3.10	34.71	27.67
292	3.51	34.80	300	3.50	34.80	27.70
388	3.43	34.83	400	3.45	34.83	27.73
581	3.44	34.86	600	3.45	34.86	27.75
772	3.35	34.86	800	3.35	34.86	27.76
961	3.37	34.875	1,000	3.40	34.88	27.78
1,102	3.52	34.905	1,500	3.50	34.91	27.79

Station 3687; July 10; latitude 49°37′ N., longitude 49°08′ W.; depth 1609 meters, dynamic height 970.827

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.40	33.45	0	6.40	33.45	26.30
24	5.84	34.45	25	5.80	34.46	27.17
48	3.44	34.69	50	3.40	34.70	27.63
71	3.11	34.75	75	3.40	34.76	27.68
95	3.33	34.80	100	3.35	34.81	27.72
142	3.38	34.84	150	3.35	34.84	27.74
190	3.33	34.84	200	3.35	34.84	27.74
285	3.34	34.86	300	3.35	34.86	27.76
389	3.30	34.86	400	3.35	34.86	27.76
580	3.34	34.86	600	3.35	34.86	27.76
770	3.38	34.88	800	3.40	34.88	27.78
963	3.39	34.895	1,000	3.40	34.90	27.79
1,446	3.47	34.91	1,500	3.45	34.91	27.79

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
Station 3688; July 10; latitude 50°02′ N., longitude 49°00′ W.; depth 1884 meters, dynamic height 970.825						
0	7.17	34.10	0	7.17	34.10	26.71
24	6.87	34.32	25	6.75	34.33	26.95
49	4.06	34.68	50	4.00	34.69	27.56
73	3.51	34.77	75	3.50	34.78	27.69
97	3.38	34.80	100	3.40	34.80	27.71
146	3.40	34.83	150	3.40	34.83	27.74
194	3.44	34.85	200	3.45	34.85	27.74
291	3.41	34.87	300	3.40	34.87	27.77
378	3.43	34.875	400	3.45	34.88	27.77
566	3.40	34.885	600	3.40	34.89	27.78
753	3.45	34.90	800	3.45	34.90	27.78
943	3.48	34.90	1,000	3.50	34.91	27.79
1,423	3.14	34.93	1,500	3.45	34.93	27.81
Station 3689; July 11; latitude 53°43′ N., longitude 55°46′ W.; depth 115 meters, dynamic height 1454.856						
0	6.62	27.57	0	6.62	27.57	21.65
20	2.14	32.11	25	0.80	32.38	25.98
40	-1.15	32.61	50	-1.40	32.67	26.30
61	-1.49	32.71	75	-1.55	32.72	26.34
81	-1.55	32.72	100	-1.60	32.73	26.36
Station 3690; July 11; latitude 53°50.5′ N., longitude 55°33′ W.; depth 195 meters, dynamic height 1454.794						
0	2.25	32.17	0	2.25	32.17	25.72
23	1.02	32.27	25	0.95	32.30	25.90
46	-1.02	32.57	50	-1.15	32.60	26.24
68	-1.39	32.73	75	-1.45	32.77	26.38
91	-1.49	32.83	100	-1.45	32.89	26.48
137	-1.13	33.21	150	-0.95	33.36	26.85
183	-0.36	33.74	200	0.00	33.90	27.24
Station 3691; July 11; latitude 53°54′ N., longitude 55°23′ W.; depth 155 meters, dynamic height 1454.767						
0	3.37	32.11	0	3.37	32.11	25.57
25	2.35	32.19	25	2.35	32.19	25.72
49	-1.36	32.84	50	-1.35	32.87	26.46
73	-1.04	33.04	75	-1.05	33.06	26.61
98	-1.20	33.17	100	-1.15	33.20	26.72
147	-0.53	33.70	150	-0.45	33.73	27.13
Station 3692; July 11; latitude 54°06.5′ N., longitude 55°02′ W.; depth 167 meters, dynamic height 1454.733						
0	4.90	32.08	0	4.90	32.08	25.40
24	4.39	32.31	25	4.00	32.33	25.69
47	-0.47	33.16	50	-0.55	33.23	26.72
70	-0.82	33.55	75	-0.80	33.59	27.02
94	-0.55	33.69	100	-0.35	33.74	27.12
141	1.14	34.18	150	1.40	34.25	27.44
Station 3693; July 12; latitude 54°20′ N., longitude 54°36′ W.; depth 185 meters, dynamic height 1454.755						
0	3.90	32.06	0	3.90	32.06	25.49
23	-0.75	32.68	25	-0.80	32.71	26.31
46	-1.32	32.91	50	-1.30	32.93	26.51
69	-1.21	33.03	75	-1.25	33.07	26.62
92	-1.17	33.20	100	-1.05	33.26	26.77
138	-0.51	33.71	150	-0.35	33.84	27.20
Station 3694; July 12; latitude 54°28′ N., longitude 54°22′ W.; depth 210 meters, dynamic height 1454.730						
0	2.54	32.37	0	2.54	32.37	25.87
22	2.37	32.45	25	2.10	32.53	26.01
44	-1.04	33.03	50	-1.05	33.10	26.63
66	-1.02	33.26	75	-0.95	33.38	26.86
88	-0.89	33.52	100	-0.70	33.62	27.05
132	-0.24	33.85	150	0.40	34.04	27.33
176	1.70	34.31	200	2.90	34.57	27.58
Station 3695; July 12; latitude 54°44′ N., longitude 53°46′ W.; depth 330 meters, dynamic height 1454.653						
0	3.18	32.66	0	3.18	32.66	26.03
23	-0.83	33.51	25	-0.85	33.55	26.99
47	-0.52	33.95	50	-0.45	33.97	27.32
70	0.60	34.02	75	0.75	34.09	27.35
93	1.27	34.23	100	1.50	34.28	27.46
140	2.56	34.47	150	2.65	34.50	27.54
186	2.90	34.59	200	3.00	34.62	27.61
279	3.56	34.78	300	3.70	34.83	27.71
Station 3696; July 12; latitude 54°50.5′ N., longitude 53°30′ W.; depth 600 meters, dynamic height 1454.614						
0	5.32	34.05	0	5.32	34.05	26.91
26	5.04	34.05	25	5.05	34.05	26.94
50	3.86	34.41	50	3.85	34.41	27.36
76	3.22	34.62	75	3.20	34.61	27.58
100	3.52	34.73	100	3.54	34.73	27.64
152	3.56	34.79	150	3.55	34.79	27.68
202	3.58	34.83	200	3.60	34.83	27.72
302	3.54	34.84	300	3.55	34.84	27.72
377	3.53	34.865	400	3.55	34.87	27.75
579	3.51	34.875	600	3.50	34.88	27.77
Station 3697; July 12; latitude 54°55′ N., longitude 53°20′ W.; depth 1565 meters, dynamic height 1454.598						
0	6.07	34.22	0	6.07	34.22	26.96
24	5.95	34.23	25	5.90	34.24	26.98
48	4.19	34.48	50	4.05	34.50	27.40
73	3.69	34.72	75	3.65	34.73	27.63
97	3.62	34.78	100	3.65	34.79	27.67
145	3.54	34.84	150	3.55	34.84	27.72
193	3.53	34.855	200	3.55	34.86	27.74
290	3.50	34.865	300	3.50	34.87	27.76
362	3.49	34.88	400	3.50	34.88	27.77
543	3.47	34.89	600	3.45	34.89	27.77
724	3.47	34.89	800	3.45	34.89	27.77
914	3.44	34.89	1,000	3.45	34.90	27.78
1,392	3.50	34.92	1,500	3.50	34.93	27.81
Station 3698; July 12; latitude 55°02′ N., longitude 53°12′ W.; depth 2103 meters, dynamic height 1454.576						
0	5.94	34.23	0	5.94	34.23	26.98
25	4.43	34.44	25	4.43	34.44	27.32
48	4.11	34.76	50	4.05	34.77	27.62
73	3.93	34.81	75	3.90	34.81	27.67
97	3.70	34.83	100	3.70	34.83	27.71
146	3.61	34.85	150	3.60	34.85	27.73
194	3.58	34.86	200	3.60	34.86	27.74
291	3.52	34.87	300	3.50	34.87	27.76
368	3.48	34.885	400	3.50	34.89	27.77
544	3.47	34.89	600	3.45	34.89	27.77
717	3.38	34.885	800	3.40	34.89	27.78
884	3.40	34.89	1,000	3.40	34.90	27.79
1,416	3.49	34.925	1,500	3.50	34.93	27.81
1,918	3.18	34.935	2,000	3.05	34.93	27.85

Station 3699; July 12; latitude 55°12′ N., longitude 52°50′ W.; depth 2999 meters, dynamic height 1454.591

Observed values: Depth, meters	Observed values: Temperature °C.	Observed values: Salinity ‰	Scaled values: Depth, meters	Scaled values: Temperature °C.	Scaled values: Salinity ‰	σ_t
0	5.85	34.40	0	5.85	34.40	27.12
25	4.03	34.43	25	4.02	34.43	27.36
50	3.80	34.63	50	3.79	34.63	27.54
75	3.67	34.69	75	3.66	34.69	27.59
99	3.64	34.74	100	3.65	34.74	27.63
149	3.55	34.81	150	3.55	34.81	27.70
199	3.51	34.85	200	3.50	34.85	27.74
298	3.50	34.85	300	3.50	34.86	27.75
338	3.49	34.87	400	3.50	34.87	27.76
515	3.49	34.88	600	3.50	34.88	27.77
696	3.49	34.88	800	3.50	34.89	27.77
881	3.47	34.89	1,000	3.50	34.90	27.78
1,364	3.51	34.93	1,500	3.50	34.93	27.81
2,133	2.94	34.935	2,000	3.15	34.93	27.84
2,580	2.06	34.91	2,500	2.20	34.91	27.91
2,972	1.83	34.87	3,000	1.80	34.87	27.91

Station 3700; July 12; latitude 55°29′ N., longitude 52°20′ W.; depth 3146 meters, dynamic height 1454.596

Observed values: Depth, meters	Observed values: Temperature °C.	Observed values: Salinity ‰	Scaled values: Depth, meters	Scaled values: Temperature °C.	Scaled values: Salinity ‰	σ_t
0	6.74	34.55	0	6.74	34.55	27.12
25	6.63	34.56	25	6.63	34.56	27.15
48	4.61	34.71	50	4.50	34.72	27.53
73	4.08	34.80	75	4.05	34.81	27.65
97	------	------	100	4.00	34.83	27.68
146	------	------	150	3.95	34.85	27.69
194	------	------	200	3.65	34.87	27.74
290	------	------	300	3.55	34.88	27.76
368	3.48	34.88	400	3.50	34.88	27.77
555	3.47	34.89	600	3.45	34.89	27.77
747	3.45	34.88	800	3.45	34.89	27.77
947	3.42	34.885	1,000	3.40	34.89	27.78
1,472	3.52	34.895	1,500	3.50	34.90	27.78
1,972	3.39	34.94	2,000	3.35	34.94	27.82
2,446	2.96	34.935	2,500	2.90	34.93	27.86
2,925	2.41	34.91	3,000	2.30	34.90	27.90

Station 3701; July 13; latitude 55°55.5′ N., longitude 51°34′ W.; depth 3451 meters, dynamic height 1454.594

Observed values: Depth, meters	Observed values: Temperature °C.	Observed values: Salinity ‰	Scaled values: Depth, meters	Scaled values: Temperature °C.	Scaled values: Salinity ‰	σ_t
0	6.96	34.71	0	6.96	34.71	27.22
24	6.89	34.71	25	6.85	34.71	27.23
48	5.57	34.76	50	5.35	34.77	27.48
72	3.97	34.815	75	3.90	34.82	27.68
96	3.40	34.81	100	3.40	34.81	27.72
145	3.30	34.82	150	3.30	34.82	27.74
193	3.49	34.85	200	3.50	34.85	27.74
289	3.38	34.855	300	3.35	34.85	27.75
378	3.38	34.85	400	3.40	34.86	27.76
567	3.44	34.875	600	3.45	34.88	27.77
756	3.45	34.875	800	3.45	34.88	27.77
951	3.46	34.885	1,000	3.45	34.89	27.77
1,451	3.56	34.92	1,500	3.55	34.92	27.79
1,898	3.43	34.925	2,000	3.35	34.93	27.82
2,372	3.18	34.94	2,500	3.10	34.94	27.85
2,864	2.87	34.945	3,000	2.70	34.94	27.88
3,172	2.41	34.92	------	------	------	------

Station 3702; July 13; latitude 56°28.5′ N., longitude 50°28′ W.; depth 3566 meters, dynamic height 1454.587

Observed values: Depth, meters	Observed values: Temperature °C.	Observed values: Salinity ‰	Scaled values: Depth, meters	Scaled values: Temperature °C.	Scaled values: Salinity ‰	σ_t
0	7.37	34.68	0	7.37	34.68	27.14
26	6.99	34.67	25	7.00	34.67	27.18
51	4.48	34.75	50	4.60	34.75	27.54
76	3.47	34.77	75	3.45	34.79	27.69
101	3.42	34.81	100	3.45	34.81	27.71
152	3.36	34.81	150	3.35	34.81	27.72
203	3.29	34.82	200	3.30	34.82	27.74
304	3.33	34.84	300	3.35	34.84	27.745
401	3.44	34.855	400	3.45	34.85	27.745
600	3.39	34.87	600	3.40	34.87	27.77
800	3.40	34.885	800	3.40	34.89	27.78
1,002	3.46	34.87	1,000	3.45	34.91	27.79
1,512	3.58	34.925	1,500	3.55	34.93	27.80
1,856	3.46	34.93	2,000	3.35	34.93	27.82
2,369	3.17	34.92	2,500	3.15	34.92	27.83
2,905	2.91	34.925	3,000	2.85	34.92	27.86
3,360	2.41	34.92	3,500	2.15	34.92	27.92

Station 3703; July 13-14; latitude 57°01.5′ N., longitude 49°26′ W.; depth 3566 meters, dynamic height 1454.602

Observed values: Depth, meters	Observed values: Temperature °C.	Observed values: Salinity ‰	Scaled values: Depth, meters	Scaled values: Temperature °C.	Scaled values: Salinity ‰	σ_t
0	7.75	34.69	0	7.75	34.69	27.09
26	6.70	34.74	25	6.75	34.74	27.27
50	5.12	34.78	50	5.11	34.78	27.52
75	3.57	34.79	75	3.56	34.79	27.68
100	3.38	34.81	100	3.40	34.81	27.72
151	3.33	34.82	150	3.30	34.82	27.74
192	3.23	34.815	200	3.25	34.82	27.74
301	3.32	34.83	300	3.30	34.83	27.75
407	3.34	34.855	400	3.35	34.85	27.75
607	3.38	34.86	600	3.40	34.86	27.76
807	3.35	34.86	800	3.35	34.86	27.76
992	3.36	34.87	1,000	3.35	34.87	27.77
1,425	3.45	34.89	1,500	3.45	34.89	27.77
1,952	3.46	34.925	2,000	3.45	34.92	27.80
2,436	3.20	34.93	2,500	3.20	34.93	27.84
2,925	2.92	34.93	3,000	2.85	34.93	27.87
3,378	2.25	34.92	3,500	1.85	34.92	27.91

Station 3704; July 14; latitude 57°36.5′ N., longitude 48°17′ W.; depth 3455 meters, dynamic height 1454.602

Observed values: Depth, meters	Observed values: Temperature °C.	Observed values: Salinity ‰	Scaled values: Depth, meters	Scaled values: Temperature °C.	Scaled values: Salinity ‰	σ_t
0	7.00	34.67	0	7.00	34.67	27.18
23	7.01	34.65	25	6.95	34.66	27.18
45	5.46	34.74	50	5.05	34.76	27.50
68	3.84	34.80	75	3.85	34.82	27.68
91	3.92	34.86	100	3.95	34.87	27.71
137	3.97	34.885	150	3.85	34.88	27.73
174	3.61	34.85	200	3.65	34.855	27.73
273	3.69	34.87	300	3.65	34.88	27.75
350	3.64	34.88	400	3.60	34.88	27.76
532	3.46	34.865	600	3.40	34.86	27.76
720	3.37	34.855	800	3.40	34.86	27.76
910	3.39	34.87	1,000	3.40	34.87	27.77
1,402	3.39	34.875	1,500	3.40	34.88	27.78
1,877	3.18	34.93	2,000	3.35	34.93	27.82
2,349	3.09	34.92	2,500	3.00	34.92	27.85
2,842	2.77	34.935	3,000	2.55	34.93	27.90
3,141	2.29	34.91	------	------	------	------

STATIONS OCCUPIED IN 1948—Continued

Station 3705; July 14; latitude 58°07.5′ N., longitude 47°06′ W.; depth 3146 meters, dynamic height 1454.619

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.01	34.71	0	7.01	34.71	27.21
27	6.17	34.75	25	6.25	34.75	27.34
53	5.94	34.77	50	6.00	34.77	27.40
80	4.97	34.90	75	5.05	34.89	27.60
105	4.84	34.93	100	4.85	34.92	27.65
159	4.72	34.955	150	4.75	34.95	27.68
212	4.55	34.945	200	4.60	34.95	27.70
317	4.22	34.915	300	4.25	34.92	27.72
398	4.11	34.92	400	4.10	34.92	27.74
597	3.83	34.91	600	3.85	34.91	27.75
796	3.62	34.89	800	3.60	34.89	27.76
998	3.64	34.90	1,000	3.65	34.90	27.76
1,508	3.51	34.935	1,500	3.50	34.93	27.81
1,966	3.20	34.925	2,000	3.15	34.93	27.84
2,453	2.75	34.925	2,500	2.70	34.92	27.87
2,945	1.91	34.91	3,000	1.65	34.90	27.94
3,019	1.55	34.895				

Station 3706; July 14; latitude 58°36.5′ N., longitude 46°04′ W.; depth 2524 meters, dynamic height 1454.592

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.01	34.75	0	7.01	34.75	27.24
22	6.05	34.76	25	6.00	34.76	27.39
44	5.91	34.76	50	5.30	34.78	27.49
67	4.52	34.83	75	1.40	34.86	27.65
89	4.20	34.885	100	4.20	34.89	27.70
134	4.17	34.895	150	4.10	34.89	27.71
178	4.00	34.88	200	3.95	34.88	27.72
266	3.90	34.88	300	3.85	34.88	27.73
420	3.69	34.88	400	3.70	34.88	27.75
511	3.62	34.885	600	3.60	34.88	27.76
685	3.54	34.875	800	3.55	34.89	27.76
868	3.56	34.895	1,000	3.55	34.91	27.78
1,348	3.48	34.93	1,500	3.40	34.93	27.82
1,817	3.06	34.93	2,000	2.85	34.93	27.87

Station 3707; July 15; latitude 58°58′ N., longitude 45°26′ W.; depth 2469 meters, dynamic height 1454.599

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.00	34.85	0	7.00	34.85	27.32
23	6.30	34.85	25	6.25	34.85	27.42
45	6.02	34.85	50	5.95	34.85	27.46
67	5.74	34.88	75	5.60	34.90	27.54
89	5.24	34.94	100	5.15	34.95	27.64
135	4.81	34.975	150	4.70	34.97	27.71
179	4.49	34.93	200	4.30	34.93	27.72
268	4.17	34.915	300	4.15	34.92	27.73
207	4.28	34.925	400	3.90	34.90	27.74
316	4.11	34.925	600	3.85	34.92	27.76
428	3.84	34.895	800	3.70	34.91	27.77
560	3.85	34.92	1,000	3.60	34.91	27.78
933	3.61	34.91	1,500	3.40	34.94	27.82
1,417	3.47	34.94				

Station 3708; July 16; latitude 59°10′ N., longitude 44°42′ W.; depth 2103 meters, dynamic height 1454.640

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.70	34.88	0	6.78	34.88	27.38
25	6.79	34.88	25	6.79	34.88	27.38
50	6.60	34.89	50	6.60	34.89	27.41
75	6.08	35.02	75	6.08	35.02	27.59
99	5.91	35.04	100	5.90	35.04	27.62
150	5.71	35.04	150	5.71	35.04	27.64
199	5.43	35.02	200	5.45	35.02	27.66
299	5.22	35.005	300	5.20	35.00	27.67
398	4.98	34.98	400	5.00	34.98	27.69
575	4.62	34.955	600	4.55	34.95	27.71
740	4.25	34.94	800	4.20	34.94	27.74
889	4.11	34.93	1,000	3.90	34.93	27.77
1,397	3.13	34.925	1,500	3.05	34.92	27.84
1,944	2.66	34.91	2,000	2.60	34.91	27.87

Station 3709; July 16; latitude 59°22.5′ N., longitude 44°38′ W.; depth 1490 meters, dynamic height 1454.677

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.47	34.17	0	4.47	34.17	27.10
22	4.48	34.19	25	4.50	34.20	27.12
42	4.58	34.23	50	4.60	34.23	27.13
63	4.63	34.24	75	4.65	34.25	27.14
84	4.66	34.26	100	5.15	34.49	27.27
127	5.90	34.99	150	5.90	35.02	27.61
169	5.83	35.025	200	5.70	35.02	27.63
253	5.43	35.01	300	4.95	34.97	27.68
310	4.90	34.96	400	4.85	34.97	27.69
486	4.77	34.975	600	4.55	34.95	27.71
667	4.39	34.94	800	4.05	34.93	27.75
848	3.96	34.93	1,000	3.60	34.91	27.78

Station 3710; July 16; latitude 59°30.5′ N., longitude 44°10′ W.; depth 195 meters, dynamic height 1454.697

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.06	33.38	0	1.06	33.38	26.77
20	1.10	33.44	25	1.15	33.46	26.82
39	1.75	33.55	50	2.30	33.86	27.06
60	2.91	34.22	75	3.50	34.36	27.35
79	3.52	34.37	100	3.40	34.37	27.37
119	3.30	34.37	150	3.15	34.37	27.39

Station 3711; July 17; latitude 59°35′ N., longitude 44°00′ W.; depth 155 meters, dynamic height 1454.766

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	-0.04	32.39	0	-0.04	32.39	26.03
19	0.02	32.56	25	0.00	32.59	26.19
38	0.01	32.65	50	0.05	32.80	26.36
58	0.13	32.91	75	-0.30	33.23	26.71
77	-0.31	33.26	100	0.55	33.66	27.02
115	1.36	33.93	150	2.85	34.28	27.35

Station 3712; July 18; latitude 58°57′ N., longitude 51°28′ W.; depth 3342 meters, dynamic height 1454.595

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.95	34.62	0	6.95	34.62	27.15
26	6.38	34.66	25	6.40	34.66	27.25
51	4.27	34.79	50	4.35	34.79	27.60
78	3.92	34.83	75	3.95	34.83	27.68
103	3.83	34.85	100	3.85	34.85	27.70
155	3.72	34.87	150	3.75	34.87	27.73
206	3.60	34.87	200	3.60	34.87	27.75
309	3.58	34.87	300	3.55	34.87	27.75
330	3.56	34.87	400	3.50	34.87	27.76
502	3.46	34.87	600	3.45	34.87	27.76
680	3.39	34.87	800	3.40	34.87	27.77
865	3.40	34.88	1,000	3.40	34.87	27.77
1,351	3.40	34.87	1,500	3.35	34.88	27.78
2,147	3.34	34.93	2,000	3.35	34.92	27.81
2,645	2.92	34.93	2,500	3.10	34.93	27.85
3,146	2.15	34.915	3,000	2.40	34.92	27.90
3,342	1.64	34.90				

Station 3713; July 19; latitude 59°11.5′ N., longitude 54°46′ W.; depth 3255 meters, dynamic height 1454.602

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.00	34.48	0	7.00	34.48	27.04
24	6.94	34.48	25	6.80	34.48	27.06
48	4.35	34.75	50	4.30	34.75	27.58
72	4.07	34.79	75	4.05	34.79	27.63
95	3.83	34.83	100	3.80	34.83	27.70
144	3.60	34.85	150	3.60	34.85	27.73
192	3.60	34.86	200	3.60	34.86	27.74
287	3.57	34.88	300	3.55	34.88	27.76
390	3.47	34.87	400	3.45	34.87	27.76
587	3.44	34.87	600	3.45	34.87	27.76
786	3.37	34.87	800	3.40	34.87	27.77
992	3.31	34.86	1,000	3.30	34.86	27.77
1,518	3.39	34.88	1,500	3.40	34.88	27.78
1,821	3.48	34.92	2,000	3.35	34.92	27.81
2,280	3.10	34.93	2,500	2.95	34.93	27.86
2,753	2.72	34.93	3,000	2.40	34.93	27.91
2,880	2.57	34.93				

Station 3714; July 19; latitude 60°29′ N., longitude 55°10′ W.; depth 3072 meters, dynamic height 1454.614

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.01	34.43	0	7.01	34.43	27.00
24	6.78	34.60	25	6.70	34.60	27.16
48	4.46	34.55	50	4.30	34.55	27.42
72	3.87	34.71	75	3.85	34.71	27.59
95	3.71	34.73	100	3.75	34.74	27.62
144	3.97	34.85	150	3.95	34.85	27.69
192	3.91	34.86	200	3.90	34.86	27.71
287	3.86	34.87	300	3.85	34.88	27.73
341	3.91	34.90	400	3.85	34.90	27.74
517	3.73	34.885	600	3.65	34.89	27.75
697	3.58	34.89	800	3.60	34.90	27.77
884	3.58	34.90	1,000	3.55	34.91	27.78
1,375	3.59	34.93	1,500	3.50	34.93	27.81
1,875	3.25	34.94	2,000	3.15	34.94	27.84
2,346	2.85	34.94	2,500	2.70	34.93	27.88
2,834	2.20	34.92	3,000	1.90	34.91	27.93

Station 3715; July 19; latitude 61°04′ N., longitude 55°36′ W.; depth 2878 meters, dynamic height 1454.612

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.37	34.48	0	7.37	34.48	26.99
26	6.77	34.49	25	6.80	34.49	27.06
51	5.77	34.60	50	5.80	34.60	27.28
77	5.31	34.71	75	5.30	34.70	27.52
102	5.09	34.79	100	5.15	34.78	26.51
154	4.86	34.86	150	4.90	34.86	27.60
205	4.74	34.90	200	4.75	34.90	27.64
307	4.31	34.915	300	4.35	34.94	27.70
411	4.06	34.90	400	4.05	34.90	27.72
607	3.82	34.92	600	3.85	34.92	27.76
799	3.59	34.93	800	3.60	34.93	27.80
1,005	3.36	34.905	1,000	3.35	34.91	27.80
1,530	2.98	34.94	1,500	3.00	34.94	27.86
1,940	2.75	34.94	2,000	2.70	34.94	27.88
2,444	2.31	34.92	2,500	2.25	34.92	27.91
2,749	1.62	34.91				

Station 3716; July 24; latitude 61°30′ N., longitude 55°44′ W.; depth 2853 meters, dynamic height 1454.622

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.63	34.12	0	7.63	34.12	26.66
26	4.49	34.45	25	4.50	34.45	27.32
51	4.37	34.665	50	4.40	34.66	27.49
77	3.96	34.73	75	3.95	34.73	27.59
102	4.34	34.79	100	4.35	34.79	27.60
154	4.68	34.94	150	4.70	34.94	27.68
205	4.35	34.90	200	4.35	34.90	27.69
307	4.52	34.93	300	4.25	34.93	27.72
413	4.13	34.92	400	4.15	34.92	27.73
614	3.78	34.90	600	3.75	34.90	27.75
812	3.58	34.90	800	3.60	34.90	27.765
1,017	3.45	34.88	1,000	3.45	34.88	27.765
1,536	3.43	34.92	1,500	3.40	34.92	27.81
1,973	3.09	34.915	2,000	3.05	34.94	27.85
2,464	2.54	34.92	2,500	2.50	34.92	27.89
2,766	1.76	34.92				

Station 3717; July 24-25; latitude 61°35′ N., longitude 56°44′ W.; depth 2780 meters, dynamic height 1454.649

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	8.07	34.12	0	8.07	34.12	26.60
25	5.65	34.185	25	5.65	34.18	26.97
50	2.79	34.43	50	2.79	34.43	27.46
75	3.09	34.61	75	3.09	34.61	27.59
99	3.67	34.73	100	3.70	34.73	27.63
150	3.99	34.83	150	3.99	34.83	27.67
200	4.08	34.855	200	4.07	34.855	27.69
299	3.86	34.86	300	3.85	34.86	27.71
376	3.89	34.88	400	3.85	34.88	27.72
555	3.83	34.88	600	3.80	34.88	27.73
724	3.73	34.87	800	3.70	34.88	27.74
913	3.66	34.845	1,000	3.65	34.90	27.76
1,398	3.61	34.93	1,500	3.50	34.93	27.80
2,048	3.03	34.92	2,000	3.05	34.92	27.84
2,532	2.48	34.92	2,500	2.50	34.92	27.89
2,772	1.73	34.90				

STATIONS OCCUPIED IN 1948—Continued

Station 3718; July 25; latitude 61°37.5′ N., longitude 57°41′ W.; depth 2707 meters, dynamic height 1454.674

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.43	34.01	0	7.43	34.01	26.61
26	3.71	34.09	25	3.80	34.09	27.10
51	2.06	34.31	50	2.05	34.30	27.43
77	2.59	34.47	75	2.55	34.46	27.53
102	2.74	34.505	100	2.75	34.50	27.53
153	3.02	34.575	150	3.00	34.57	27.57
204	3.45	34.67	200	3.40	34.67	27.61
306	4.13	34.86	300	4.10	34.85	27.68
391	4.07	34.88	400	4.05	34.88	27.70
586	3.79	34.865	600	3.80	34.87	27.73
780	3.79	------	800	3.80	34.89	27.74
980	3.79	34.90	1,000	3.80	34.90	27.75
1,486	3.59	34.93	1,500	3.55	34.93	27.79
1,998	3.16	34.92	2,000	3.15	34.92	27.83
2,477	2.52	34.93	2,500	2.50	34.93	27.89
2,623	2.09	34.90				

Station 3719; July 25; latitude 61°39′ N., longitude 58°39′ W.; depth 2469 meters, dynamic height 1454.669

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.98	34.05	0	7.98	34.05	26.55
25	5.22	34.12	25	5.22	34.12	26.98
50	2.50	34.41	50	2.50	34.41	27.48
75	2.94	34.57	75	2.94	34.57	27.57
100	3.61	34.70	100	3.61	34.70	27.60
150	3.95	34.79	150	3.95	34.79	27.64
200	4.06	34.83	200	4.06	34.83	27.66
300	3.87	34.825	300	3.87	34.825	27.68
401	3.78	34.85	400	3.75	34.85	27.71
596	3.82	34.88	600	3.80	34.88	27.73
788	3.79	34.88	800	3.80	34.88	27.73
986	3.68	34.88	1,000	3.65	34.88	27.74
1,488	3.54	34.93	1,500	3.55	34.93	27.79
1,961	3.04	34.93	2,000	3.00	34.93	27.85
2,357	2.28	34.87				

Station 3720; July 25; latitude 61°39′ N., longitude 59°41′ W.; depth 2158 meters, dynamic height 1454.671

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	8.09	34.085	0	8.09	34.08	26.56
25	7.04	34.20	25	7.04	34.20	26.80
50	3.60	34.38	50	3.60	34.38	27.35
74	2.96	34.48	75	2.95	34.49	27.50
99	3.13	34.61	100	3.15	34.62	27.59
146	3.89	34.78	150	3.90	34.79	27.65
197	3.96	34.845	200	3.95	34.84	27.68
296	3.99	34.86	300	4.00	34.86	27.70
378	3.94	34.88	400	3.90	34.88	27.72
566	3.83	34.875	600	3.80	34.87	27.73
754	3.80	34.885	800	3.75	34.88	27.73
941	3.61	34.875	1,000	3.65	34.88	27.74
1,421	3.60	34.94	1,500	3.55	34.94	27.80
1,907	3.14	34.94	2,000	2.95	34.94	27.86

Station 3721; July 25; latitude 61°37.5′ N., longitude 60°40′ W.; depth 732 meters, dynamic height 1454.680

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.30	34.02	0	7.30	34.02	26.63
25	4.56	34.07	25	4.56	34.07	27.01
49	1.78	34.27	50	1.75	34.28	27.43
74	2.31	34.46	75	2.35	34.47	27.54
99	2.94	34.58	100	3.00	34.59	27.58
147	3.66	34.73	150	3.70	34.73	27.62
196	3.78	34.78	200	3.80	34.76	27.64
295	4.12	34.83	300	4.10	34.83	27.66
281	4.11	34.82	400	3.95	34.81	27.68
475	3.89	34.85	600	3.90	34.86	27.71
671	3.87	34.87	800	3.90	34.88	27.72

Station 3722; July 26; latitude 61°45′ N., longitude 61°32′ W.; depth 531 meters, dynamic height 1454.700

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.82	33.63	0	5.82	33.63	26.51
24	-0.66	33.72	25	-0.70	33.73	27.13
48	-0.95	33.84	50	-0.95	33.85	27.24
72	0.01	33.98	75	0.10	34.00	27.31
96	0.98	34.19	100	1.15	34.23	27.43
144	2.81	34.515	150	2.95	34.57	27.57
192	3.55	34.70	200	3.60	34.71	27.62
288	3.84	34.765	300	3.85	34.77	27.64
373	3.96	34.82	400	3.95	34.82	27.67
419	3.93	34.82				

Station 3723; July 26; latitude 61°55′ N., longitude 62°14′ W.; depth 403 meters, dynamic height 1454.735

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.13	33.35	0	6.13	33.35	26.26
26	4.36	33.54	25	4.50	33.53	26.59
51	0.69	33.80	50	0.85	33.80	27.11
76	-0.69	33.85	75	-0.75	33.85	27.23
101	0.02	34.00	100	0.00	34.00	27.32
153	1.44	34.27	150	1.40	34.26	27.45
207	2.40	34.48	200	2.30	34.45	27.53
306	3.74	34.79	300	3.70	34.78	27.66
404	3.76	34.79	400	3.80	34.79	27.66

Station 3724; July 26; latitude 62°08′ N., longitude 63°00′ W.; depth 318 meters, dynamic height 1454.764

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.09	30.88	0	4.09	30.88	24.53
23	0.77	33.34	25	0.60	33.40	26.80
45	-1.51	33.56	50	-1.50	33.59	27.05
68	-1.43	33.68	75	-1.40	33.71	27.14
90	-1.28	33.75	100	-1.00	33.82	27.22
136	0.88	34.09	150	1.05	34.17	27.40
181	1.47	34.29	200	1.70	34.35	27.49
271	2.59	34.54	300	2.95	34.65	27.63

Station 3725; July 26; latitude 62°20′ N., longitude 63°46′ W.; depth 220 meters, dynamic height 1454.848

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.67	30.88	0	0.67	30.88	24.78
24	-1.36	32.71	25	-1.40	32.76	26.37
47	-1.64	33.01	50	-1.65	33.05	26.61
71	-1.62	33.22	75	-1.60	33.24	26.76
94	-1.57	33.31	100	-1.55	33.35	26.86
141	-1.30	33.60	150	-1.25	33.63	27.07
188	-1.01	33.72	200	-0.95	33.75	27.16

Station 3726; July 27; latitude 62°09′ N., longitude 56°05′ W.; depth 2524 meters, dynamic height 1454.649

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.25	34.07	0	7.25	34.07	26.68
25	6.68	34.085	25	6.68	34.08	26.75
49	2.95	34.35	50	2.90	34.36	27.41
74	2.91	34.55	75	2.90	34.56	27.57
98	3.44	34.68	100	3.50	34.69	27.61
148	4.28	34.87	150	4.25	34.88	27.68
198	4.28	34.90	200	4.25	34.90	27.70
296	4.16	34.89	300	4.15	34.89	27.70
395	3.91	34.885	400	3.90	34.88	27.72
589	3.69	34.87	600	3.70	34.87	27.74
782	3.66	34.885	800	3.70	34.89	27.75
982	3.70	34.90	1,000	3.70	34.90	27.76
1,488	3.51	34.945	1,500	3.50	34.94	27.81
1,998	3.05	34.94	2,000	3.05	34.94	27.85
2,429	2.27	34.865	2,500	2.10	34.87	27.88

STATIONS OCCUPIED IN 1948—Continued

Station 3727; July 27: latitude 62°29′ N., longitude 56°18′ W.; depth 2478 meters, dynamic height 1454.656

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.75	34.05	0	7.75	34.05	26.58
25	3.70	34.05	25	3.70	34.05	27.08
50	3.13	34.33	50	3.13	34.33	27.36
75	3.46	34.57	75	3.46	34.57	27.52
99	3.72	34.68	100	3.75	34.68	27.57
149	3.95	34.78	150	3.95	34.78	27.63
199	4.37	34.87	200	4.35	34.87	27.67
298	4.37	34.91	300	4.35	34.91	27.70
382	4.24	34.905	400	4.20	34.90	27.71
572	3.99	34.91	600	3.95	34.91	27.74
762	3.83	34.905	800	3.80	34.90	27.75
959	3.70	34.90	1,000	3.70	34.90	27.76
1,460	3.53	34.93	1,500	3.50	34.93	27.80
1,963	3.01	34.94	2,000	2.95	34.94	27.86
2,351	2.27	34.89	2,500	1.90	34.88	27.90

Station 3728; July 27; latitude 62°50′ N., longitude 55°28′ W.; depth 2305 meters, dynamic height 1454.657

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.64	34.035	0	7.64	34.04	26.59
26	7.08	34.035	25	7.10	34.04	26.67
51	3.76	34.42	50	3.75	34.41	27.36
76	3.84	34.62	75	3.85	34.61	27.51
101	4.03	34.72	100	4.05	34.74	27.59
153	4.48	34.88	150	4.45	34.87	27.66
203	4.68	34.94	200	4.65	34.94	27.69
304	4.44	34.94	300	4.45	34.94	27.71
396	4.24	34.91	400	4.20	34.91	27.72
590	3.98	34.905	600	3.95	34.91	27.74
783	3.78	34.905	800	3.80	34.90	27.75
982	3.65	34.90	1,000	3.65	34.90	27.76
1,487	3.44	34.93	1,500	3.40	34.93	27.81
1,993	3.02	34.93	2,000	3.00	34.93	27.85
2,294	2.38	34.91	------	------	------	------

Station 3729; July 28; latitude 63°08′ N., longitude 54°40′ W.; depth 1481 meters, dynamic height 1454.695

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.45	33.84	0	6.45	33.84	26.60
26	5.22	33.93	25	5.30	33.93	26.81
51	2.80	34.29	50	2.80	34.28	27.35
76	2.90	34.43	75	2.90	34.43	27.46
101	3.16	34.525	100	3.15	34.52	27.50
152	3.79	34.70	150	3.80	34.69	27.58
203	3.81	34.745	200	3.80	34.74	27.62
304	4.14	34.825	300	4.10	34.82	27.66
396	4.35	34.89	400	4.35	34.89	27.68
588	4.19	34.90	600	4.15	34.90	27.71
776	4.00	34.91	800	4.05	34.91	27.73
975	3.79	34.90	1,000	3.75	34.90	27.75
1,478	3.48	34.92	1,500	3.45	34.92	27.80

Station 3730; July 28; latitude 63°26′ N., longitude 53°54′ W.; depth 1088 meters, dynamic height 1454.733

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.03	32.70	0	5.03	32.70	25.86
26	1.64	33.48	25	1.65	33.48	26.80
51	1.50	33.65	50	1.50	33.63	26.93
77	1.76	33.96	75	1.75	33.93	27.15
102	2.23	34.17	100	2.20	34.15	27.30
154	3.27	34.48	150	3.20	34.45	27.45
295	4.73	34.78	200	4.70	34.75	27.53
307	4.87	34.91	300	4.85	34.90	27.63
400	4.73	34.955	400	4.70	34.95	27.69
597	4.26	34.935	600	4.25	34.93	27.72
792	3.95	34.91	800	3.95	34.91	27.74
1,000	3.68	34.91	1,000	3.65	34.91	27.77

Station 3731; July 28; latitude 63°41′ N., longitude 53°28′ W.; depth 1362 meters, dynamic height 1454.786

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.12	33.21	0	6.12	33.21	26.16
25	2.73	33.27	25	2.73	33.27	26.55
50	1.39	33.53	50	1.39	33.53	26.86
75	1.35	33.61	75	1.35	33.64	26.95
100	1.32	33.70	100	1.32	33.70	27.00
149	1.68	33.92	150	1.70	33.93	27.15
199	3.19	34.41	200	3.25	34.42	27.42
299	4.21	34.76	300	4.20	34.77	27.61
406	4.55	34.925	400	4.55	34.92	27.69
606	4.30	34.83	600	4.30	34.93	27.71
806	4.01	34.915	800	4.00	34.92	27.75
1,006	3.81	34.91	1,000	3.85	34.91	27.75

Station 3732; July 28; latitude 63°45′ N., longitude 53°20′ W.; depth 969 meters, dynamic height 1454.794

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.74	33.10	0	5.74	33.10	26.10
25	3.58	33.24	25	3.58	33.24	26.45
50	1.50	33.52	50	1.50	33.52	26.85
74	2.08	33.76	75	2.05	33.76	26.995
99	2.26	33.78	100	2.25	33.78	26.995
148	2.10	33.98	150	2.10	34.00	27.18
198	3.83	34.43	200	3.90	34.45	27.38
297	4.60	34.85	300	4.60	34.85	27.62
412	4.59	34.935	400	4.60	34.93	27.68
613	4.33	34.93	600	4.35	34.93	27.71
814	3.97	34.91	800	4.00	34.91	27.74
965	3.93	34.915	1,000	3.95	34.92	27.75

Station 3733; July 28; latitude 63°48′ N., longitude 53°06′ W.; depth 174 meters, dynamic height 1454.785

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.21	33.14	0	6.21	33.14	26.08
24	2.30	33.41	25	2.25	33.41	26.71
48	1.88	33.44	50	1.85	33.44	26.76
72	1.68	33.47	75	1.65	33.47	26.80
96	1.56	33.52	100	1.60	33.58	26.88
144	3.00	34.29	150	3.15	34.38	27.39

Station 3734; July 28; latitude 63°52′ N., longitude 52°54′ W.; depth 57 meters, dynamic height 1454.781

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.97	33.06	0	5.97	33.06	26.05
23	2.11	33.42	25	2.05	33.43	26.74
45	1.67	33.51	50	1.60	33.53	26.84

Station 3735; July 28; latitude 64°00′ N., longitude 52°36′ W.; depth 44 meters, dynamic height 1454.790

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.81	32.24	0	5.81	32.24	25.41
13	4.66	33.29	25	3.35	33.53	26.70
21	3.47	33.49	------	------	------	------

Station 3736; July 28; latitude 64°01′ N., longitude 52°23′ W.; depth 137 meters, dynamic height 1454.800

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.95	32.60	0	5.95	32.60	25.70
24	4.91	33.17	25	4.85	33.18	26.27
48	3.07	33.54	50	2.95	33.55	26.75
72	------	------	75	2.05	33.59	26.87
96	------	------	100	1.50	33.61	26.92

STATIONS OCCUPIED IN 1948—Continued

Station 3737; July 29; latitude 63°04′ N., longitude 56°36′ W.; depth 2195 meters, dynamic height 1454.691

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.20	33.87	0	7.20	33.87	26.52
25	6.73	34.07	25	6.73	34.07	26.75
50	4.42	34.52	50	4.42	34.52	27.39
75	4.12	34.60	75	4.12	34.60	27.48
100	4.45	34.69	100	4.45	34.69	27.51
149	4.22	34.78	150	4.20	34.78	27.61
199	3.98	34.80	200	4.00	34.80	27.65
299	4.26	34.87	300	4.25	34.87	27.68
394	4.14	34.865	400	4.10	34.87	27.70
588	3.84	34.87	600	3.85	34.87	27.72
780	3.76	34.885	800	3.80	34.89	27.74
977	3.71	34.89	1,000	3.70	34.89	27.75
1,475	3.58	34.93	1,500	3.55	34.89	27.76
1,982	3.15	34.935	2,000	3.10	34.93	27.84
2,135	2.94	34.90				

Station 3738; July 29; latitude 63°35′ N., longitude 57°05′ W.; depth 1655 meters, dynamic height 1454.754

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.16	33.71	0	7.16	33.71	26.41
24	1.79	33.62	25	1.75	33.62	26.91
49	1.39	33.82	50	1.40	33.83	27.09
73	1.57	34.01	75	1.55	34.02	27.24
99	1.39	34.04	100	1.40	34.04	27.27
147	1.49	34.18	150	1.55	31.19	27.37
196	2.04	34.36	200	2.10	34.38	27.48
295	3.36	34.67	300	3.40	34.68	27.61
388	3.82	34.755	400	3.85	34.77	27.64
581	4.29	34.87	600	4.25	34.88	27.68
775	4.12	34.90	800	4.10	34.90	27.72
968	4.00	34.915	1,000	3.95	34.92	27.75
1,461	3.63	34.93	1,500	3.60	34.93	27.79
1,563	3.55	34.93				

Station 3739; July 29; latitude 64°11′ N., longitude 57°24′ W.; depth 842 meters, dynamic height 1454.708

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.36	33.73	0	7.36	33.73	26.39
25	2.72	33.86	25	2.72	33.86	27.02
50	2.31	33.99	50	2.31	33.99	27.16
75	2.16	34.11	75	2.16	34.11	27.27
100	1.98	34.24	100	1.98	34.24	27.38
149	2.25	34.44	150	2.25	34.44	27.52
198	2.96	34.58	200	3.00	34.59	27.58
298	3.73	34.715	300	3.75	34.73	27.61
287	3.69	34.715	400	4.15	34.82	27.65
466	4.29	34.855	600	4.25	34.89	27.69
639	4.20	34.895	800	3.80	34.90	27.75
827	3.72	34.90				

Station 3740; July 30; latitude 64°39′ N., longitude 57°36′ W.; depth 732 meters, dynamic height 1454.717

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.05	33.82	0	7.05	33.82	26.50
24	6.78	33.805	25	6.70	33.80	26.54
47	2.96	34.12	50	2.75	34.12	27.23
71	1.57	34.13	75	1.50	34.14	27.34
94	1.44	34.24	100	1.45	34.28	27.45
141	2.71	34.52	150	2.90	34.55	27.56
188	3.32	34.63	200	3.35	34.65	27.59
282	3.62	34.70	300	3.65	34.71	27.61
425	3.85	34.77	400	3.80	34.76	27.64
528	4.19	34.84	600	4.05	34.84	27.67
639	3.99	34.84	800	3.60	34.84	27.72

Station 3741; July 30; latitude 65°05′ N., longitude 58°02′ W.; depth 586 meters, dynamic height 1454.767

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.03	32.36	0	4.03	32.36	25.71
23	-0.54	33.06	25	-0.75	33.10	26.62
45	-1.62	33.545	50	-1.65	33.56	27.03
68	-1.67	33.67	75	-1.70	33.69	27.13
90	-1.74	33.705	100	-1.70	33.74	27.16
135	-0.83	33.85	150	-0.35	33.91	27.27
180	0.64	34.08	200	1.25	34.19	27.39
270	2.68	34.47	300	3.05	34.55	27.56
362	3.44	34.66	400	3.30	34.67	27.61
556	2.09	34.62	600	1.75	34.59	27.70

Station 3742; July 30; latitude 65°31′ N., longitude 58°22′ W.; depth 492 meters, dynamic height 1454.802

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.05	30.11	0	3.05	30.10	24.00
27	-1.24	33.155	25	-1.15	32.93	26.50
55	-1.61	33.57	50	-1.60	33.53	27.00
82	-1.53	33.685	75	-1.55	33.67	27.11
109	-1.61	33.71	100	-1.60	33.70	27.14
164	-0.84	33.87	150	-1.20	33.81	27.22
219	0.98	34.15	200	0.30	34.06	27.34
328	2.57	34.49	300	2.35	34.43	27.52
394	1.53	34.43	400	1.50	34.43	27.57
481	1.65	34.51	600			

Station 3743; July 31; latitude 65°44′ N., longitude 58°20′ W.; depth 549 meters, dynamic height 1454.782

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.16	32.01	0	4.16	32.01	25.42
23	1.69	32.68	25	1.30	32.74	26.26
46	-1.46	33.62	50	-1.55	33.72	27.10
69	-1.65	33.705	75	-1.65	33.71	27.15
92	-1.67	33.715	100	-1.65	33.73	27.16
137	-1.18	33.82	150	-0.75	33.88	27.25
183	0.35	34.00	200	0.90	34.09	27.23
275	2.30	34.435	300	2.50	34.50	27.55
350	2.97	34.60	400	3.40	34.69	27.62
466	3.99	34.79				

Station 3744; July 31; latitude 65°59′ N., longitude 58°18′ W.; depth 644 to 567 meters, dynamic height 1454.796

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.08	31.995	0	4.08	31.995	25.42
20	0.64	32.265	25	0.00	32.56	26.16
40	-1.09	33.175	50	-1.45	33.49	26.97
61	-1.61	33.63	75	-1.63	33.67	27.12
81	-1.69	33.69	100	-1.70	33.72	27.16
121	-1.63	33.745	150	-1.40	33.79	27.20
161	-1.18	33.81	200	0.10	34.05	27.32
242	1.56	34.26	300	2.70	34.51	27.52
332	2.93	34.55	400	2.50	34.55	27.59
469	2.00	34.55	600	1.00	34 55	27.70

STATIONS OCCUPIED IN 1948—Continued

Station 3745; July 31; latitude 66°24′ N., longitude 58°44′ W.; depth 630 meters, dynamic height 1454.821

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.58	30.62	0	3.58	30.62	24.37
23	-0.05	32.425	25	-0.20	32.52	26.14
45	-1.40	33.355	50	-1.45	33.43	26.92
68	-1.50	33.58	75	-1.55	33.61	27.07
91	-1.57	33.66	100	-1.55	33.69	27.13
137	-1.48	33.76	150	-1.30	33.79	27.20
182	-0.53	33.895	200	0.05	34.00	27.30
273	2.23	34.35	300	2.45	34.43	27.51
382	2.77	34.56	400	2.75	34.57	27.59
586	1.29	34.51	600	1.15	34.54	27.66

Station 3746; July 31; latitude 66°50′ N., longitude 59°16′ W.; depth 1088 meters, dynamic height 1454.892

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.67	29.91	0	3.67	29.91	23.80
24	-1.25	32.58	25	-1.30	32.60	26.25
47	-1.55	33.02	50	-1.55	33.09	26.63
70	-1.46	33.33	75	-1.45	33.38	26.87
93	-1.53	33.51	100	-1.55	33.55	27.02
141	-1.56	33.655	150	-1.55	33.67	27.12
187	-1.46	33.74	200	-1.30	33.77	27.19
280	-0.07	34.02	300	0.20	34.09	27.38
349	0.80	34.26	400	1.30	34.38	27.54
532	2.04	34.535	600	1.85	34.51	27.62
722	1.23	34.50	800	0.95	34.50	27.66
918	0.64	34.50	1,000	0.50	34.50	27.69

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U. S. TREASURY DEPARTMENT
COAST GUARD

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IN THE

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Acting Commandant.

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E: d (5)
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FOREWORD

This report covers the activity of the International Ice Patrol during the 1949 season. Oceanographer Floyd M. Soule prepared the oceanographic section. Lt. Leroy A. Cheney, USCG, prepared the remainder of the Bulletin.

International Ice Observation and Ice Patrol services have been conducted by the U. S. Coast Guard as an international service since 1914. This service is carried on under the provisions of the International Convention for Safety of Life at Sea signed at London 31 May 1929. Several minor changes in these provisions were made in the convention signed in London 10 June 1948; however, these provisions will not be in effect until ratified by the contracting governments. The conduct of International Ice Patrol will not be much affected by these changes which acknowledge the fact that aircraft are a useful tool in searching for ice and allow the managing government to use as many vessels as it deems necessary. The 1929 convention imposes on the contracting governments the obligation of using their influence to induce the owners of all vessels crossing the Atlantic to follow recognized routes and to pass outside regions known or believed to be endangered by ice. Expenses of the service are distributed among the various maritime nations in the proportions specified in the 1929 convention. When the provisions of the 1948 convention become effective, expenses will be apportioned according to the amount of each nation's tonnage which passes through the ice patrol area in a given season.

INTERNATIONAL ICE PATROL, 1949

For the season of 1949, Capt. Julius F. Jacot, United States Coast Guard, was Commander, International Ice Patrol. Forces assigned were two PB1G (flying fortress) aircraft; one oceanographic vessel, the USCGC *Evergreen;* and two Coast Guard Cutters, the *Mocoma* and *Acushnet.* The two latter were maintained in a 72-hour standby status at their respective home ports of Miami, Fla., and Portland, Me., ready to proceed to station should the need for a continuous vessel patrol arise. Fortunately, the ice conditions were such in 1949 that such a patrol was not necessary and weather conditions were such that the service of ice observation could be carried out by aircraft alone. An Ice Patrol Office with a staff of ice observers and communication personnel was maintained at the U. S. Naval Operating Base, Argentia, Newfoundland.

As in previous years, efforts were directed towards improving the techniques for detection of ice by using long-range aircraft. Aircraft patrols are now a primary source of ice information. Using both visual and radar search methods, these aircraft carried out searches of the ice-infested areas. At times it was impossible to observe the Grand Banks area due to heavy fog. During these periods merchant vessels traversing the area supplied the ice patrol with invaluable information by reporting radar targets which were possible bergs. When such reports were received, it was presumed that the particular merchant vessel had made a plot of the target to see that it was stationary. Although no requests were made of merchant vessels to furnish the International Ice Patrol with water-temperature and weather reports due to the absence of the ice patrol vessel, quite a few ships did furnish same to the Ice Patrol Office at Argentia. Such information is gratefully acknowledged.

As in 1948 the USCGC *Evergreen* was the oceanographic vessel of the ice patrol. This year there was less material trouble, mainly because two new oceanographic winches were installed prior to the *Evergreen's* departure from Boston.

The season of 1949 was marked by a scarcity of icebergs. Prior to the beginning of the season, the values derived from the use of the Smith formulae, described in U. S. Coast Guard Bulletin 19, part 3, pointed to a heavier than average ice year for 1949. Actually, only 47 bergs came south of 48° N. for the entire season. Of those that did come south of 48° N., only five reached the vicinity of latitude 47°40′ N., 49°00′ W., on the east slope of the Grand Banks. Approximately three reached the latitude 46°35′ N., but these were just south of Cape Race and grounded on Pig and Ballard Banks until they disintegrated. No icebergs threatened tracks C or B. Traffic was shifted from track C to track B on schedule. Two current maps

obtained from the *Evergreen's* oceanographic surveys on the east slope of the Grand Banks revealed a well defined Labrador Current flowing with a maximum velocity of 0.6 knots. With such a current system in evidence, bergs could have crossed both tracks C and B. There was a great reduction in the number of bergs between those found in the southwestern part of Baffin Bay during the 1948 ice census and presumed to include those bergs which would appear in the Grand Banks region during the 1949 season, and the actual number found in the 1949 season in the Newfoundland area. Bergs which did arrive in the vicinity of latitude 48° N., were small and eroded, and on an average did not last much over 4 days after arriving in this latitude off the eastern slope of the Grand Banks. Several times in March and April, groups of five or more bergs threatened to drift into this region only to disappear within 5 days of their sighting. Elsewhere in this Bulletin there is a discussion of weather and its possible effect upon the movement and attrition of icebergs during and immediately preceding the 1949 season.

AERIAL ICE RECONNAISSANCE

As in previous years, two winterized PB1G (flying fortress) aircraft were used for aerial reconnaissance. These two aircraft were the only units used by the ice patrol to scout for ice, except for three flights made in PBY5A aircraft and one occasion on 6 June when the *Evergreen* was employed to locate and track a small berg at 48°55′ N., 51°25′ W., at the end of an oceanographic cruise. Weather and ice conditions for the spring of 1949 combined to allow the ice patrol season to be completed without ordering the cutters *Mocoma* and *Acushnet* to Argentia, Newfoundland, for duty as ice-patrol vessels. Although this season was notably successful in the use of aircraft for searches, it is too much to expect that in future years aircraft alone may accomplish the mission of ice observation and patrol. Radar has proven valuable equipment in these planes, but with present radar equipment it is impossible to distinguish between bergs and ships. In the case of radar installations on surface craft, where speeds are relatively low, tracking the radar target reveals whether or not it is motionless. If it has any appreciable speed, it is apparent that the target is a ship and not an iceberg. However, if the target speed is negligible it may be either a berg or a ship hove-to and only visual methods can identify the target. As the critical areas are frequented by fishing vessels employing hand-line fishermen operating from dories in the vicinity of the mother ship, the problem of identifying a target by means of radar alone is further complicated since the mother ship and dories present a target appearance similar to that of a berg and growlers. In the case of airborne radar, however, where the plane is traveling at about 150

knots it is practically impossible to determine whether or not the target speed is less than say 2 knots. In periods of reduced visibility, it is usually possible to identify radar targets by visual sighting. However, when an area is completely blanketed by fog, safe flying practices prohibit visual identification of radar targets. The risk of collision with a pinnacled berg at low altitudes is real. Flights were sent out whenever terminal conditions, flying weather, and weather in observing areas gave promise of successful aerial reconnaissance.

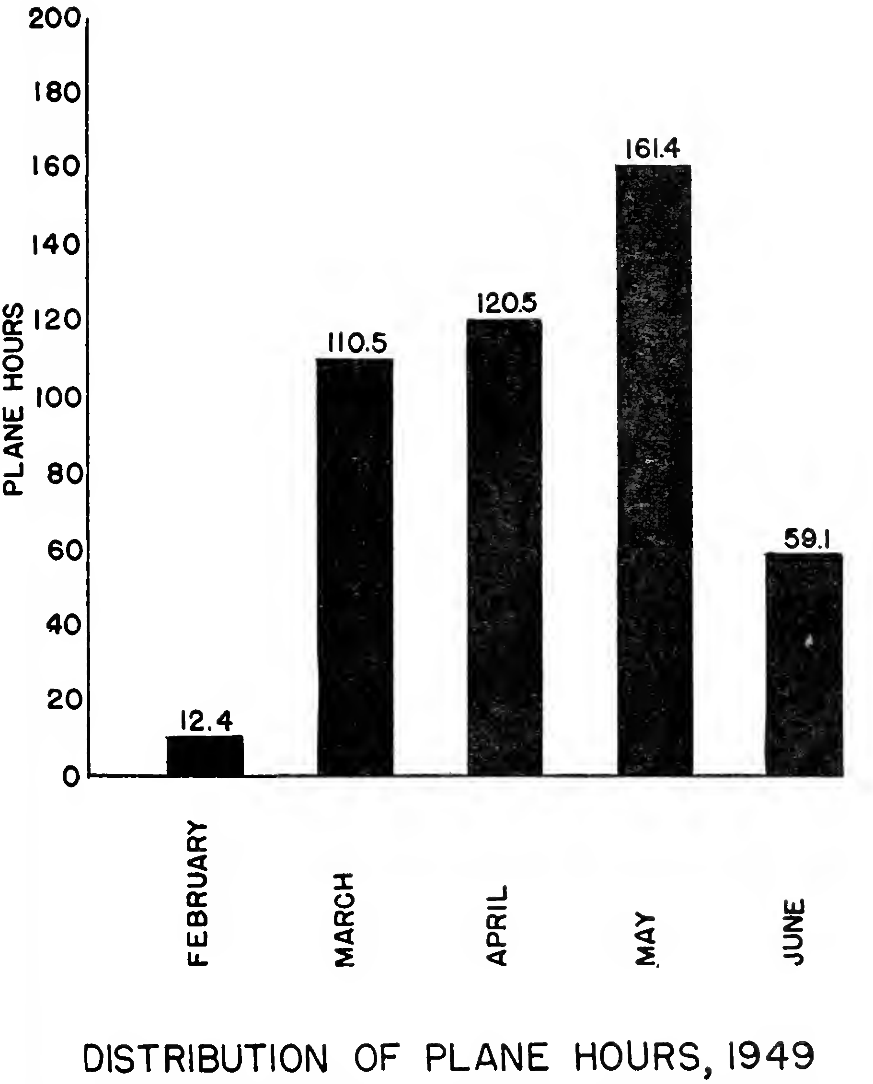

FIGURE 1.—Distribution and duration of aerial reconnaissance flights during the 1949 season.

During the spring of 1949, a total of 59 flights were made on 42 different days from 28 February to 15 June inclusive. The duration of these flights totalled 463.95 hours distributed chronologically as shown in figure 1. The individual flights varied in duration from 0.3 hours to 11.4 hours. The flights averaged 7.86 hours per flight for PB1G aircraft and 7.90 hours for the three flights made by PBY5A aircraft which were used to take advantage of good flying weather in May and June to enable the aircraft to search more area in a given day. The maximum interval between flights was 7 days, occurring between 23 March and 30 March. The remaining intervals between flights are summarized below:

Interval in days	*Frequency*
1	12
2	10
3	9
4	5
5	1
6	2

On the basis of an estimated average ground speed of 150 knots for PB1G aircraft and 100 knots for PBY5A aircraft, it is estimated that the aircraft flew a distance of about 68,000 miles during the 1949 season. As search courses are usually laid out parallel and 25 miles apart, it is estimated that the area searched was about 1,700,000 square miles. Since coverage is never 100 percent complete, it is estimated that the total area visually covered was approximately a million square miles.

In good observing weather, the ability of a PB1G to search a given area in a minimum of time is incomparably greater than that of a slow-moving surface vessel. During poor aerial observing weather, however, the surface vessel can do the job which becomes impossible for the aircraft. Thus aircraft and surface craft supplement each other and, in a normal year, together result in a more efficient patrol than if operations were limited to one or the other. Since the costs of operating aircraft are less than the costs of operating surface craft, by the judicious use of the two types of craft the over-all cost of an efficient patrol can be kept down to about the same figure as the cost of a less efficient completely surface patrol through taking advantage of the seasonal fluctuations in aerial observing weather. Thus by making use of aircraft alone during the first part of the season, when good observing weather occurs with sufficient frequency to permit following the progress of the ice by aerial observation and delaying the use of surface craft until midseason when aerial observing conditions normally deteriorate in the critical areas, the over-all cost is kept at about that required for an all-surface

patrol; and during light years or years when good aerial observing conditions continue later than usual, the use of aircraft results in a lower over-all cost for the season.

COMMUNICATIONS

The daily schedule of ice broadcasts to shipping was maintained from 18 March to 15 June. Each broadcast was preceded by a general call on 500 kilocycles after which the transmitting station (Radio Argentia, NWP) announced the NIDK ice bulletin with the operating signal to shift to 480 and 8100 kilocycles. After shifting to these frequencies there followed a 30 second period of test signals to permit receiver tuning. The ice bulletin was then broadcast twice, the first transmission being made at 15 words per minute and the second transmission at 25 words per minute, with a two minute interval between transmissions. Times and frequencies for the daily broadcasts were as follows:

Time (GCT)	Frequency (kilocycles)	Emission
0118	480	A 2
0118	8100	A 1
1318	480	A 2
1318	8100	A 1

These times of transmission were selected so that each bulletin would contain the maximum amount of recently received information, would be transmitted with the least number of breaks due to silent periods, and would be completed during the hours when the operators on single-operator ships were on duty. In addition, the morning broadcast was timed to include a digest of the reports which increase in number during the first few hours after daylight; and the evening broadcast was timed to include the results of any aerial reconnaissance made during the day.

Each bulletin followed the same general pattern. The most recent ice information was given first, listing the ice from south to north and east to west. As in previous years, a distinction was made between ice sighted by units of the International Ice Patrol, i.e., ice-patrol aircraft, the oceanographic vessel, or one of the ice-patrol vessels, and that sighted by all other units. The former was listed as ice sighted and the latter as ice reported.

Since there were no ice-patrol vessels on patrol in 1949, merchant vessels were not requested to make four hourly reports while in the ice-patrol area. However, some merchant ships did submit such re-

ports unsolicited. A tabulation of the reports received for the entire ice-patrol season is as follows:

Total number of ships sending reports	125
Number of ice reports	134
Total number of ships sending ice reports	66
Number of water temperatures	481
Total number of ships sending water temperature	26
Total number of ships asking for special reports	24

Of those ships sending reports 40 percent were British and 25 percent were United States vessels. A total of 16 nationalities was represented by these reports.

The importance of communications to the success of the International Service of Ice Observation and Ice Patrol cannot be overstressed. In the past, criticism and comment from maritime agencies and vessels making use of this service has resulted in increased efficiency and usefulness. Such comments should be addressed to the Commandant, U. S. Coast Guard, Washington 25, D. C.

ICE CONDITIONS IN 1949

JANUARY

On 30 January 1949, a Dutch aircraft reported a berg at 59°00′ N., 36°00′ W. This berg came from the east coast of Greenland and presented little hazard to shipping along the North Atlantic tracks. No other reports were received for January.

FEBRUARY

Drift ice was reported on 16 February extending from 52°00′ N., 50°58′ W., southeast to 50°45′ W. Cape Race Radio reported drift ice from 48°43′ N., 49°35′ W., to 48°20′ N., 49°20′ W., on 23 February. This was the first indication of ice moving into the vicinity of the Grand Banks for the 1949 season. Thereafter sporadic reports were received indicating a berg at 48°41′ N., 49°42′ W., on 24 February, drift ice in the vicinity of 48°42′ N., 53°05′ W., on 25 February, and a radar target (possible berg) at 45°22′ N., 49°59′ W., on 26 February. This target was reported by an unknown vessel, but subsequent investigation failed to confirm the presence of a berg. On 28 February, it was possible to send out two ice-observation aircraft on the first flights of the season. The limit of light sludge ice and pancake ice extended from 47°40′ N., 52°18′ W., to 48°13′ N., 51°13′ W., to 49°15′ N., 50°20′ W. The information collected in February was not sufficient to give any clear picture of ice movement. Few bergs were reported and it is estimated that none came south of 48° N.

MARCH

In March there were sufficient personnel at Argentia to carry out a full program of ice-observation flights. Two such flights were made on 4 March. From these flights the outer limits of drift ice were found to extend from Cape Spear to 47°18′ N., 52°15′ W., to 48°20′ N., 51°29′ W., to 48°55′ N., 50°07′ W., to 49°45′ N., 51°30′ W. For the remainder of the month the edge of the drift ice oscillated about these limits with the inshore boundary receding to 49°20′ N., 53°00′ W., by 31 March. The comparison of these limits with the average limits as set forth in the Ice Atlas (H.O. 550) shows that this season was not following the usual trend. The extreme limits in March were 60 to 120 miles north of the average limits and the ice in general was receding northward earlier than was usual. During March the average wind direction of a rectangle centered at 51° N., 51° W., parallel to the Labrador Coast, with dimensions 600 miles by 180 miles, was toward 034° T. with a velocity of 8 knots. There are no data presently available to show the average temperature of the air over water for this month. However, from the experience of personnel stationed at Argentia who flew over these waters, the air seemed to be somewhat warmer than usual. In fact, the spring of 1949 seemed to be comparatively mild in this area. The effect of this warm average wind moving the ice offshore into warmer waters to where it melted is considered to be a partial explanation of the small amount of ice in the area for the month of March. The normal rate of advancement of sea ice carried along by the Labrador Current apparently was more than compensated by this increase in the rate of attrition. What few bergs were sighted seemed to bear out this greater rate of disintegration because their above-water surfaces were badly eroded and all bergs seen outside the pack were medium to small sized bergs. The southernmost berg was reported on the 6th at 47°55′ N., 50°33′ W.

There was only one berg south of 48° N., during the month of March. During this month 13 ice-observation flights were made.

APRIL

On 3 April an ice observation flight was sent out, but because of fog it returned to Argentia without encountering any ice or radar contacts. Several ships reported radar targets as possible bergs in the vicinity of 47°55′ N., 49°52′ W. It was not until the 6th of April that it was possible to send out two flights to cover this area, but no bergs were sighted in a position that might indicate that they were the previously reported radar targets. Thus it was concluded that such targets were ships drifting in fog. All ice sighted by these flights was north of 48° N., and west of 50°30′ W., except one berg sighted on the 6th at 47°41′ N., 49°02′ W. On the 9th another flight

was sent out, but returned with negative results because of fog. Most of the ice observed during the first week of April was concentrated close inshore and many of the bergs were stranded in the numerous bays and inlets of the east coast of Newfoundland from Cape St. Francis north to Cape Freels.

Two flights on 13 April revealed a gradual movement of bergs and growlers offshore, with one berg drifting as far east as 49°20′ W. It was thought at this time that these bergs were the forerunners of the large number of bergs expected for this season. Ship reports were noticeably few in number; no doubt the result of poor visibility in the search area. One vessel reported a berg at 47°09′ N., 51°20′ W., on the 16th of April and it was thought this berg was one of two previously reported by ice-observation aircraft on the 13th and 14th east of this position. The drift as indicated by these reports was west and apparently this was the explanation of why no bergs were rounding the shoulder of the Grand Banks in the vicinity of latitude, 47° N.

On the 16th Cape Race reported a berg at 46°35′ N., 52°54′ W., which was the first known berg to drift to this vicinity during this season. The next complete search of the area was accomplished by flights on the 22d of April. There was little over-all change, but by this time a few bergs were beginning to spread out along the 100-fathom curve north of 48° N. Those bergs which were sighted in the vicinity of 47°09′ N., 51°20′ W., were never sighted or reported again, and it is presumed that they disintegrated within 6 days of the last report. Between 26 April and 30 April, three more flights were made in the area. By 30 April there were no bergs south of 48° N., east of 52° W. However, several bergs were drifting south along the east coast of the Avalon Peninsula. The one in the vicinity of Cape Race disintegrated into several growlers by the 26th.

The *Esso Manhattan* reported a radar target (possible berg) at 40°45′ N., 48°09′ W., on 28 April. That such a target could be an iceberg seemed doubtful since this position was so far removed from any ice previously sighted or reported. However, to make sure that no iceberg had drifted south undetected and was threatening trans-atlantic shipping, a plane was dispatched to the vicinity of the report that same date. After a thorough search of the area and after identifying every radar target as other than ice, the plane returned to the base with negative results. No further reports from ships were received to confirm the presence of an iceberg in this region and it was concluded that the reported radar target had been a ship.

Beginning with the end of March and continuing through April, the southern limits of the drift ice retreated northward. By the 22d of the month the limits of the drift ice were from Cape Bonavista to 49°50′ N., 53°00′ W., to 49°40′ N., 52°10′ W., then curving to the northwest. Since this ice was no longer a menace, potential or other-

wise, to shipping across the North Atlantic it was dropped from the ice bulletin broadcast on the 23d of April.

Shifts in the North Atlantic Track Agreement tracks were effected as scheduled without any recommendations from Commander, International Ice Patrol; that is, shipping on track C shifted to track B on 11 April and that on track D shifted to track E on 11 April. It is estimated that 23 bergs drifted south of 48° N. during this month. Fourteen ice-observation flights were made in April.

The Canadian Department of Transport started its regular aerial surveys of the St. Lawrence area on 1 April. Prior to this date it had undertaken preliminary flights on the 11th, 14th, 21st and 29th of March. Thereafter reports were furnished daily by the Canadian Department of Transport to shipping. The limits of ice on the 5th of April were from 15 miles off Cape Ray to 47°00′ N., 58°40′ W., to 46°00′ N., 58°00′ W., to 45°00′ N., 59°00′ W., to 40 miles off Canso. This was the extreme limit of ice and thereafter the limits receded until by the 28th of April it was reported that routes to river and gulf ports via Cabot Strait and Strait of Canso were clear for navigation. Aerial surveys by the Canadian Department of Transport were discontinued as of that date.

MAY

A flight was made on 1 May north along the coast of Labrador to determine the potentialities for the rest of the season. When planning the flight, course lines were laid out to approximate the 1,000-fathom curve, but as the flight progressed it was evident that the flight plan should be shifted 25 to 50 miles nearer the coast. It was apparent from this flight that bergs were few in number and that pack ice was closer to the beach than expected. Combining the results of reconnaissance flights on 30 April, 1, 2. and 3 May, it was estimated that there were only 248 bergs and 69 growlers between 47°10′ N., and 58°25′ N., and west of 50° W. The great majority of these were within 50 miles of the east coasts of Newfoundland and Labrador and in positions where drift to the Grand Banks would be unlikely.

During this month the general pattern for flights was to maintain a check on the bergs already sighted every 2 to 3 days and then to send a flight southward along the east slope of the Grand Banks about once a week. The majority of the bergs coming south of 48° N., during May were west of 51° W., and either entered Conception Bay or grounded along the east coast of the Avalon Peninsula between Cape St. Francis and Cape Race. By 29 May two bergs had progressed south of Cape Race and grounded on Pig Bank and Ballard Bank. The general drift of bergs once they had entered the area south of 48° N., and west of 52° W., was south by west at speeds varying from 5 to 10 miles per day.

Offshore the situation followed the same general trend that occurred in April. The flight on 1 May sighted a small cluster of bergs and growlers in the vicinity of 49°30′ N., 51°00′ W., and on 2 May bergs in the vicinity of 48°40′ N., 51°00′ W. According to the information obtained from the *Evergreen's* current survey of the area, further south there was a well-defined Labrador Current and it was hard to understand why some of these bergs did not proceed south along the east slope of the Grand Banks to threaten the shipping lanes. However, as in April, they disappeared long before they reached dangerous positions. On 9 May one of these bergs was sighted at 47°50′ N., 48°40′ W., and on the 22d one was reported at 47°38′ N., 48°24′ W. Neither of these bergs were relocated so it is presumed that they disintegrated within a few days of their last sighting. By the end of the month a limiting line for ice could be drawn from 46°20′ N., 53°10′ W., to 47°00′ N., 52°20′ W., to 49°00′ N., 51°00′ W.

During May 20 flights were made and it was possible to obtain good coverage as a result of the good observing weather. It was estimated that 20 bergs came south of 48° N. in May.

JUNE

As of 1 June the only known ice considered to be a potential hazard to shipping was an iceberg sighted by the USCGC *Winnebago* on 31 May at 49°45′ N., 51°43′ W., one berg sighted on the 2d at 50°04′ N., 52°20′ W., and one reported on the 2d at 50°01′ N., 52°34′ W. By 2 June weather conditions were favorable for flying, so a plane was sent out to investigate the berg reported by the *Winnebago*. It was relocated at 49°20′ N., 51°50′ W. This indicated a drift of 25 miles in 2 days in a direction south by west. However, this berg began to drift to the eastward and was resighted on the 5th at 48°55′ N., 51°25′ W., on the 7th at 48°57′ N., 50°58′ W., on the 8th at 48°55′ N., 50°44′ W., on the 13th at 48°40′ N., 49°33′ W., and on the 14th at 48°44′ N., 49°17′ W. During the 7th and 8th of June the USCGC *Evergreen* drifted with this berg to check its size and drift. Her report indicated that the berg was rapidly decreasing in size so that it would not remain a berg long enough to enter into the shipping lanes.

The other bergs sighted and reported on the 2d were never relocated, although three flights were sent out to search for them. Thus it was presumed that these either disintegrated or stranded in some of the numerous indentations of the Newfoundland coast.

In June, 15 bergs were stranding or traveling south along the east coast of the Avalon Peninsula. Two of these stranded in the vicinity of Pig Bank and Ballard Bank off Cape Race. The continuity of reports of ice in this area was broken by the discontinuance of ice-

patrol activities on 15 June so the movement of ice along the coast is somewhat difficult to follow subsequent to this date. In the first half of June bergs traveled south along the east coast at speeds varying from 2 to 7 miles per day. One or two grounded in the vicinity of Ferryland Head. At least three stranded for a short time on Bantam Rocks 4 to 5 miles off Renewse Head. These broke up or drifted off the shoal spots within 10 days of their original sighting.

During the season there had never been any indication of bergs being swept to the west of Cape Race by currents. However, ship reports received after the termination of ice-patrol activities showed that one berg rounded Cape Race during the latter part of June. It was reported on the 24th at 46°50′ N., 53°51′ W.

On 26 June the *Simeon G. Reed* reported three small growlers at 42°14′ N., 47°52′ W. Previous reports and sightings for the month of June gave no clue to the route traveled by the iceberg which calved these growlers. Water temperatures in this vicinity are fairly high, especially in June, so these growlers did not last very long and were never reported again.

As a final check on ice conditions, one flight was made to the vicinity of Belle Isle on 10 June to check the distribution of icebergs. The remnants of drift ice were 5 to 10 miles off shore along the coasts of Labrador and Newfoundland. Along the Newfoundland coast the outer limit of drift ice extended south to Bell Island and then made a gradual curve to the shore in White Bay. Drift ice in the Strait of Belle Isle had receded to the westward as far as 56° W. Off shore there was no ice which could conceivably drift south to the Grand Banks. Therefore, on 15 June the International Service of Ice Observation and Patrol was officially terminated for the season of 1949. It was estimated that three bergs came south of 48° N. during June. During this month, 11 ice-observation flights were made, including one postseason flight on 20 June.

JULY-DECEMBER

No icebergs came south of 48° N. during this period.

ICE CONDITIONS NORTH OF 50° NORTH

A discussion of ice conditions north of 50° N. is of necessity limited in scope. Only 11 flights were made north of 50° N. during the 1949 season. Two of these flights were ineffective because of heavy fog. The lack of continuous information throughout the season allows only very broad generalizations of ice conditions in the area.

Generally, the outer ice limits north of 50° N. were from 60 to 100 miles west of the average ice limits set forth in the Ice Atlas of the Northern Hemisphere (H.O. Pub. 550). On 1 May a plane was sent

as far north as 58° N. to obtain information which would help to explain the lack of ice in the Grand Banks area. Between Cape Freels and latitude 58° N., 205 bergs were sighted, all of which were within 50 miles of the Newfoundland and Labrador coasts. The number and location of these bergs indicated that the season was very light and that few if any of these bergs could be expected to drift south of 48° N. during the remainder of the season. The first report of any ship navigating the Strait of Belle Isle was that of the U. S. Naval Transport *Peconic*, which reported the strait full of drift ice on 20 June.

A picture of some of the changes undergone by west ice may be had by comparing the reports of USCGC *Evergreen* on 17 July with the reports from the ship and planes used for the ice census during August. On 17 July the USCGC *Evergreen* scouted the eastern limits of west ice which were from 66°48′ N., 58°44′ W., to 66°51′ N., 58°00′ W., to 68°03′ N., 56°26′ W., and from 68°56′ N., 60°06′ W., to 70°06′ N., 58°36′ W. One month later the vessel and planes assigned to carry out the ice census reported the boundaries of west ice to be within an area enclosed by a line through the following points: 68°00′ N., 64°35′ W., to 67°55′ N., 60°00′ W., to 68°50′ N., 58°35′ W., to 69°40′ N., 61°00′ W., to 70°40′ N., 59°05′ W., to 71°43′ N., 61°38′ W., to 72°25′ N., 62°00′ W., to 72°00′ N., 64°48′ W., to 68°00′ N., 64°35′ W.

Comparisons of the limits of west ice for the months of July and August can only be made with the southeastern limits because the USCGC *Evergreen* was unable to circumnavigate the west ice. However, it was noted that the southeastern limits of the west ice maintained approximately the same shape in August as in July. In August these limits had receded about 50 miles to the northwestward. The limits of the west ice in July approximated the average limits of the west ice as depicted in the Ice Atlas. In August there was a decided difference. Sea ice, which is normally concentrated in the western part of Baffin Bay in August, was observed to be more towards the south and center of Baffin Bay. This left the northern half of Baffin Bay free of sea ice. Most of this ice was not the heavy ice which is normal for Baffin Bay. The only close pack observed was that encountered by the USCGC *Winnebago* on 10 August at 70°28′ N., 59°44′ W., and 71°43′ N., 61°38′ W., and on 14 August at 72°28′ N., 63°02′ W.

The total number of bergs counted in Baffin Bay during this ice census was 40,232. Of this number 33,962 were counted in an area extending from the middle of Baffin Bay to the west coast of Greenland, including the fjords and indentations of the coast. The rest of the bergs were scattered in decreasing numbers from the northern part of Baffin Bay south along the western side to Cape Dyer, with a

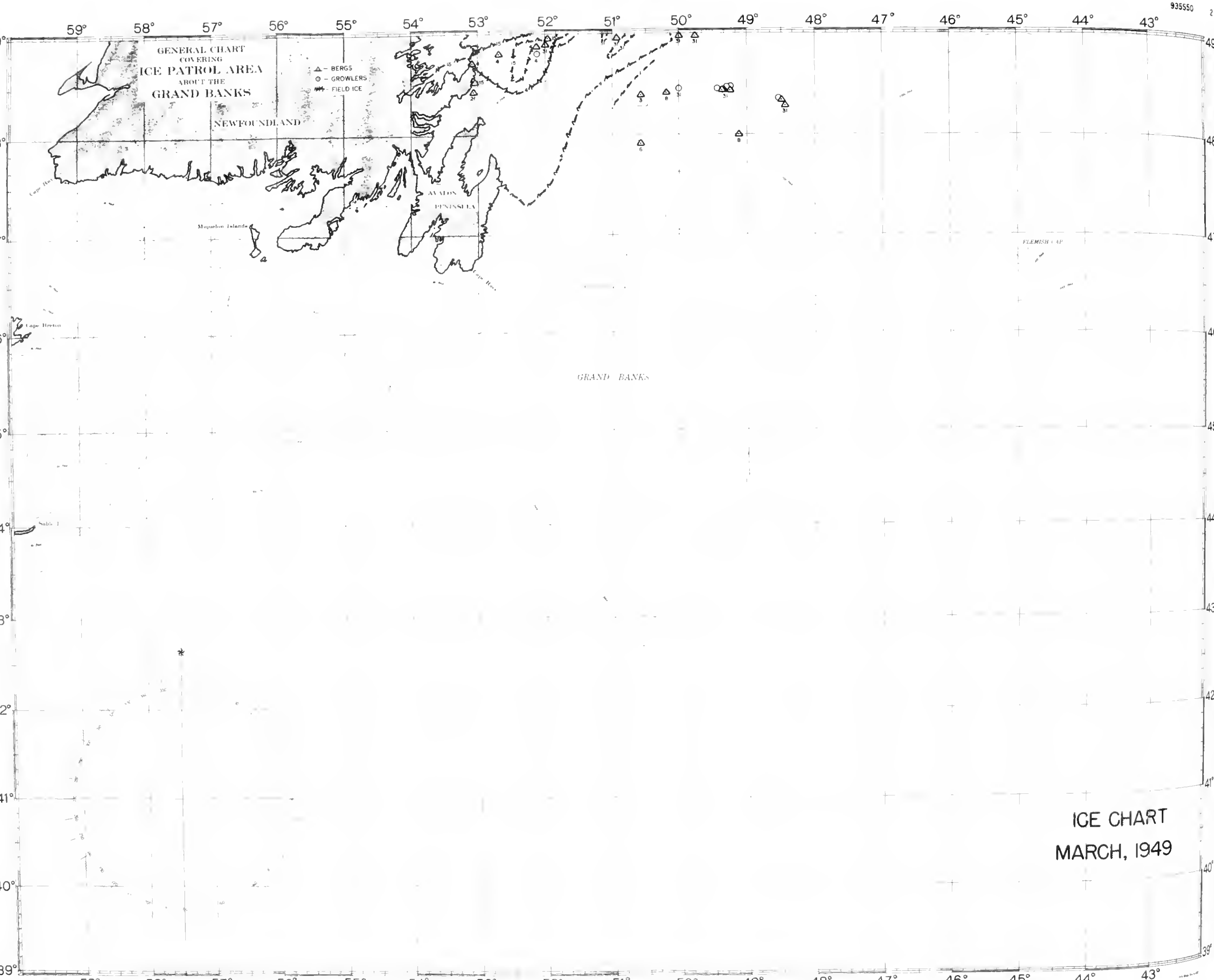

FIGURE 2.—Ice conditions, March 1949. Figures indicate day of month ice was sighted or reported.

Figure 3.—Ice conditions, April 1949. Figures indicate day of month ice was sighted or reported.

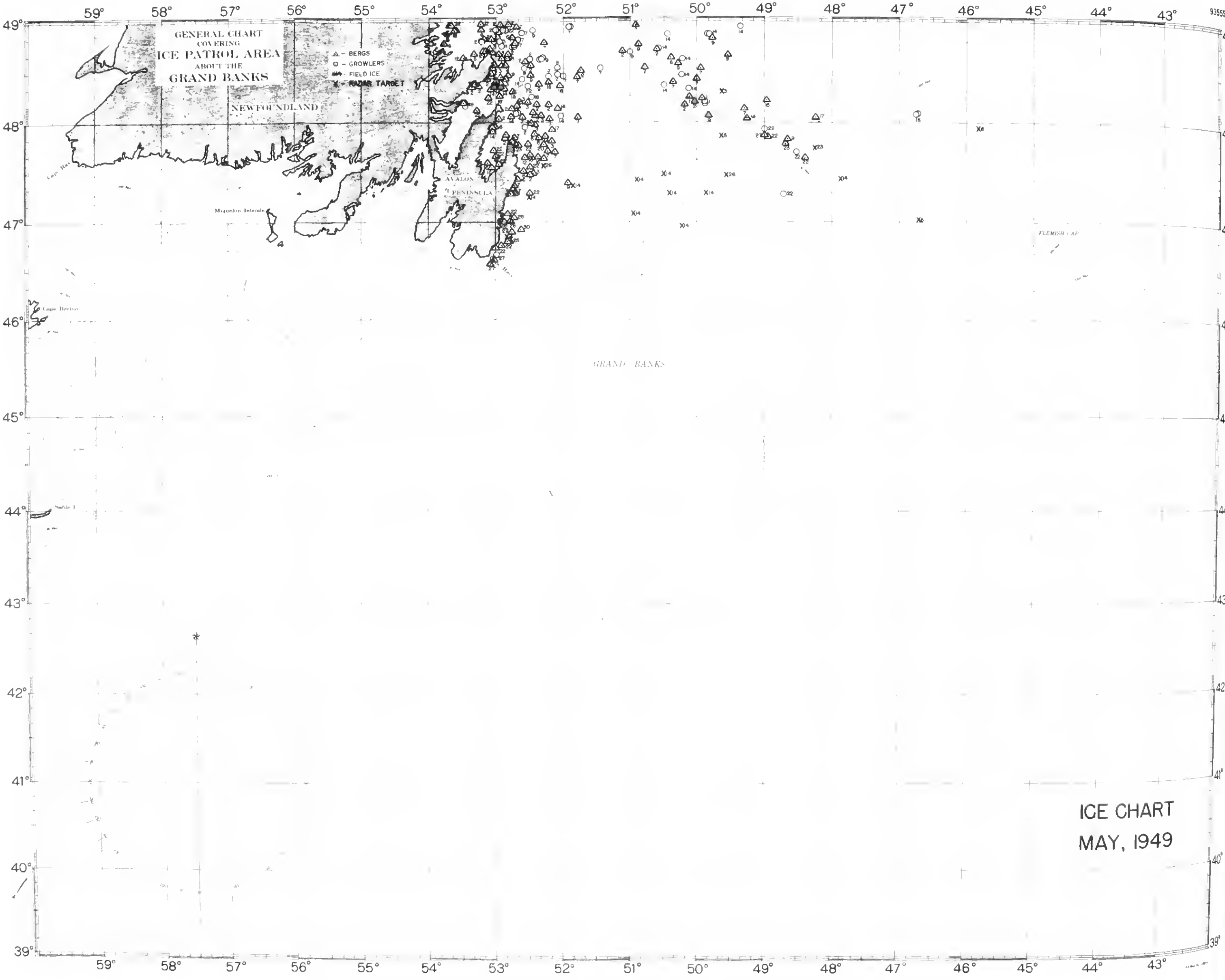

FIGURE 4.—Ice conditions, May 1949. Figures indicate day of month ice was sighted or reported.

FIGURE 5.—Ice conditions, June 1949. Figures indicate day of month ice was sighted or reported.

slight concentration north of Cape Dyer. At first glance these numbers seem to indicate a tremendous amount of attrition as the icebergs travel around Baffin Bay to Cape Dyer. Quantitative analysis of this attrition awaits comparisons with future ice censuses. Reports of pack ice and bergs off Greenland were scarce. To attempt to draw a continuous picture of ice movements in Greenland waters was well nigh impossible. Several reports received from the USS *Edisto* in late February indicated that storis had not yet rounded Cape Farewell. One report of a berg in position 50°51′ N., 41°00′ W., on 16 November, was the only report during 1949 outside of the regular ice-patrol season which showed that an iceberg had drifted to an unusual position. Otherwise reports throughout the season indicated that the ice limits for this year approximated the average ice limits for bergs and pack ice set forth in the Ice Atlas of the Northern Hemisphere.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
1	Feb. 10	Hydro, Washington	49 52	51 45	Large fields of brash with scattered close and open pack, 70 percent being in belt approximately 15 miles wide in west by southerly direction to horizon, apparently not navigable by unreinforced vessels.
2	Feb. 23	Cape Race radio	48 43 to 48 20	49 35 to 49 20	Field ice.
3	do	Bali	48 58	49 13	Large berg.
4	Feb. 24	Cape Race radio	48 41	49 42	Berg 50 feet high.
5	Feb. 25	Bonavista radio	48 42	53 05	One mile ice.
6	Feb. 26	do	48 42	53 05	Do.
7	do	TFNA	45 22	49 59	Radar target, possible berg.
8	Feb. 27	Bonavista radio	48 42	53 05	One mile of thick slob ice.
9	Feb. 28	do	48 42	53 05	One mile of scattered slob ice.
10	do	Ice Patrol plane	47 40 to 48 13 to 49 15	52 18 to 51 13 to 50 20	Southern limits of light sludge ice and pancake floes.
11	do	do	48 10 to 49 18	52 16 to 50 25	Southern limits of heavy pack ice.
12	Mar. 1	Bonavista radio	48 42	53 05	One mile of scattered slob ice.
13	do	USCGC *Campbell*	48 17 to 48 43	50 59 to 50 23	Scattered patches sludge ice.
14	Mar. 2	Bonavista radio	48 42	53 05	Two miles of thick slob ice.
15	Mar. 3	USCGC *Mendota*	48 23	50 35	Berg, 40 feet high.
16	Mar. 4	Ice Patrol plane	Cape Spear to 47 18 to 48 20 to 48 55 to 49 45	 52 15 51 29 50 07 51 30	Limits of drift ice; brash and sludge.
17	do	do	Cape Bonavista to 48 25 to 49 10 to 49 20	 52 20 51 50 52 30	Limits of close pack.
18	do	do	Cape Bonavista to 49 20	 53 05	Eastern limits of consolidated pack.
19	do	do	48 48	52 41	Small berg.
20	do	do	48 52	52 09	Do.
21	do	do	49 25	52 21	Do.
22	do	do	49 45	51 59	Do.
23	do	do	48 48	52 08	Growler.
24	do	do	49 53	51 11	Do.
25	do	do	49 55	51 01	Do.
26	do	do	49 38	53 02	Berg.
27	do	do	49 46	53 09	Do.
28	do	Bonavista radio	48 42	53 05	Two miles of thick slob ice.
29	Mar. 5	do	48 42	53 05	Three miles of thick scattered slob ice.
30	Mar. 6	do	48 42	53 05	One mile of thick scattered slob ice.
31	do	*Nova Scotia*	47 55	50 35	Berg.
32	do	do	47 31 to 47 20	52 33 to 52 18	Moderate heavy slob ice.
33	Mar. 8	*Newfoundland*	48 00	49 08	Berg.
34	do	USCGC *Duane*	48 25	50 12	Berg 200 feet long, 40 feet high.
35	do	USCGC *Duane*	48 50	49 45	Few widely scattered patches very light ice.
36	do	*Newfoundland*	47 31	52 22	Patches slob ice.
37	Mar. 15	Ice Patrol plane	49 12 to 48 52 to 48 32 to 48 30 to 48 53	51 00 52 10 52 20 52 30 52 26	Drift ice, mostly brash and sludge.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
38	Mar. 15	Ice Patrol plane	49 07 to 48 48	51 30 to 53 03	Southern limit of close pack. Separated from drift ice by 2 to 4 miles of open water.
39	do	do	48 57	51 59	Small berg.
40	do	do	Cape Bonavista to 49 20 to 51 25	51 00 to 51 00	Outer limits of drift ice.
41	do	do	48 31	53 02	Berg.
42	do	do	49 15	53 02	Do.
43	do	do	49 16	53 00	Do.
44	do	do	49 23	52 15	Large drydock type berg.
45	do	do	49 25	51 48	Berg.
46	do	do	49 25	52 45	Do.
47	do	do	49 31	52 55	Do.
48	do	do	49 32	52 49	Do.
49	do	do	49 33	52 50	Do.
50	do	do	49 33	52 56	Do.
51	do	do	49 35	51 43	Do.
52	do	do	49 35	52 42	Do.
53	do	do	49 35	52 55	Do.
54	do	do	49 36	51 40	Do.
55	do	do	49 37	51 39	Do.
56	do	do	49 37	53 35	Do.
57	do	do	49 38	49 28	Do.
58	do	do	49 38	52 20	Do.
59	do	do	49 39	49 35	Large berg.
60	do	do	49 39	52 21	Berg.
61	do	do	49 39	52 53	Do.
62	do	do	49 41	53 20	Do.
63	do	do	49 44	52 41	Do.
64	do	do	49 44	52 48	Do.
65	do	do	49 46	53 35	Do.
66	do	do	49 46	53 38	Do.
67	do	do	49 49	51 25	Do.
68	do	do	49 15	52 18	Growler.
69	do	do	49 25	51 00	Do.
70	do	do	49 36	52 39	Do.
71	do	do	49 44	52 38	Do.
72	do	do	49 57	52 21	Do.
73	do	do	49 59	52 49	Do.
74	Mar. 18	do	49 47	55 28	Berg.
75	do	do	49 27	49 34	Growler.
76	Mar. 21	do	49 20 to 49 05 to 49 15	50 05 to 51 20 to 52 35	Limits of drift ice.
77	do	do	48 25	53 05	Berg aground.
78	do	do	49 13	53 03	Small berg.
79	do	do	49 30	51 49	Berg.
80	do	do	49 32	52 36	Do.
81	do	do	49 35	51 11	Do.
82	do	do	49 13	51 52	Growler.
83	do	do	49 13	52 27	Do.
84	do	do	49 15	52 35	Do.
85	do	do	49 22	52 01	Do.
86	Mar. 23	do	49 30 to 49 12 to 49 45 to 51 30	53 30 to 52 30 to 51 05 to 50 45	Limits of close pack ice.
87	do	do	49 00	52 58	Berg.
88	do	do	49 11	51 35	Do.
89	do	do	49 11	52 15	Do.
90	do	do	49 11	52 18	Do.
91	do	do	49 14	51 00	Large twin berg.
92	do	do	49 14	52 41	Berg.
93	do	do	49 14	52 51	Do.
94	do	do	49 15	52 45	Do.
95	do	do	49 20	52 07	Do.
96	do	do	49 20	52 38	Do.
97	do	do	49 22	52 50	Do.
98	do	do	49 23	52 37	Do.
99	do	do	49 26	51 33	Do.
100	do	do	49 26	51 52	Do.
101	do	do	49 26	52 23	Large berg.
102	do	do	49 31	51 19	Berg.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
103	Mar. 23	Ice Patrol plane	49 32	51 11	Berg.
104	---do---	---do	49 41	51 21	Do.
105	---do---	---do	49 43	51 20	Do.
106	---do---	---do	49 51	50 37	Do.
107	---do---	---do	49 51	50 47	Do.
108	---do---	---do	49 57	51 07	Do.
109	---do---	---do	49 10	51 11	Growler.
110	---do---	---do	49 18	51 39	Do.
111	---do---	---do	49 22	51 40	Do.
112	---do---	---do	49 25	49 45	Do.
113	---do---	---do	49 29	51 05	Do.
114	---do---	---do	49 39	51 06	Do.
115	---do---	---do	49 40	51 08	Do.
116	---do---	---do	49 41	51 21	Do.
117	---do---	---do	49 46	51 16	Do.
118	---do---	---do	49 54	49 49	Do.
119	---do---	---do	49 55	49 49	Do.
120	---do---	USCGC *Bibb*	49 18	51 33	Small berg.
121	---do---	USCGC *Bibb*	49 23	51 42	Do.
122	---do---	USCGC *Bibb*	49 24	51 28	Do.
123	---do---	USCGC *Bibb*	49 25	51 41	Do.
124	---do---	USCGC *Bibb*	49 30	51 35	Do.
125	---do---	USCGC *Bibb*	49 34	51 08	Do.
126	---do---	USCGC *Bibb*	49 56	51 13	Do.
127	---do---	USCGC *Bibb*	49 39	51 08	Do.
128	---do---	USCGC *Bibb*	49 50	51 24	3 growlers.
129	---do---	USCGC *Bibb*	49 58	51 25	Growler.
130	Mar. 27	USCGC *Sorrel*	49 05	50 30	Large floe of drift ice.
131	---do---	USCGC *Sorrel*	49 00 to 49 13	50 14 to 49 40	Southeastern limits of ice.
132	---do---	USCGC *Sorrel*	49 13	49 40	Berg.
133	---do---	USCGC *Sorrel*	49 19	49 42	Growler.
134	Mar. 31	USCGC *Winnebago*	48 26	49 21	2 bergs.
135	---do---	Ice Patrol plane	49 20 to 49 15 to 49 12	49 55 to 50 00 to 50 30	Tongue of ice.
136	---do---	---do	49 12 to 48 45 to 49 05 to 49 08 to 48 50 to 49 10 to 49 18 to 49 12	50 30 to 51 00 to 50 47 to 51 04 to 51 07 to 51 12 to 51 11 to 50 30	Limits of drift ice.
137	---do---	---do	48 18	48 28	Berg.
138	---do---	---do	48 20	48 30	Small berg.
139	---do---	---do	48 25	49 15	Berg.
140	---do---	---do	48 54	52 00	Do.
141	---do---	---do	48 58	50 57	Do.
142	---do---	---do	48 59	49 47	Do.
143	---do---	---do	48 59	50 00	Do.
144	---do---	---do	49 00	49 50	Do.
145	---do---	---do	49 04	52 35	Do.
146	---do---	---do	49 05	51 00	Do.
147	---do---	---do	49 05	51 51	Do.
148	---do---	---do	49 07	49 50	Do.
149	---do---	---do	49 08	49 50	Do.
150	---do---	---do	49 08	51 02	Do.
151	---do---	---do	49 08	51 05	Do.
152	---do---	---do	49 08	51 08	Do.
153	---do---	---do	48 21	48 32	Growler.
154	---do---	---do	48 37	49 15	Do.
155	---do---	---do	48 37	49 19	Do.
156	---do---	---do	48 37	49 27	Do.
157	---do---	---do	48 37	50 00	Do.
158	---do---	---do	48 42	51 06	Do.
159	---do---	---do	49 04	49 54	Do.
160	---do---	---do	49 05	51 05	Berg.
161	---do---	---do	49 07	51 05	Do.
162	---do---	---do	49 11	50 30	Do.
163	---do---	---do	49 14	50 17	Do.
164	---do---	---do	49 29	50 25	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
165	Mar. 31	Ice Patrol plane	49 33	51 38	Berg.
166	do	do	49 34	50 35	Do.
167	do	do	49 35	52 41	Do.
168	do	do	49 36	53 04	Do.
169	do	do	49 44	52 31	Do.
170	do	do	49 45	53 10	Do.
171	do	do	49 52	51 15	Do.
172	do	do	49 53	52 55	Do.
173	do	do	49 54	49 02	Do.
174	do	do	49 55	52 59	Do.
175	do	do	49 21	52 16	Growler.
176	do	do	49 26	51 05	Do.
177	do	do	49 26	52 50	Do.
178	do	do	49 29	51 53	Do.
179	do	do	49 29	52 37	Do.
180	do	do	49 30	50 04	Do.
181	do	do	49 30	52 17	Do.
182	do	do	49 30	52 37	Do.
183	do	do	49 31	50 59	Do.
184	do	do	49 35	51 36	Do.
185	do	do	49 38	52 37	Do.
186	do	do	49 48	52 46	3 growlers.
187	do	do	49 49	51 10	Growler.
188	do	do	49 49	51 57	Do.
189	do	do	49 51	51 31	Do.
190	do	do	49 51	52 19	Do.
191	do	do	49 53	50 25	Do.
192	do	do	49 54	50 30	Do.
193	do	do	49 55	52 35	3 growlers.
194	do	do	49 57	52 40	Growler.
195	Apr. 3	*Fort Townshend*	45 21 to 45 05	58 58 to 59 17	Passed scattered slob ice with heavy pieces.
196	Apr. 4	*Empress of Canada*	47 53	48 34	Radar, target, possible berg.
197	do	USCGC *Owasco*	47 55	49 52	Do.
198	do	USCGC *Owasco*	47 54	49 44	Do.
199	do	Bonavista radio	48 42	53 05	Widely scattered small ice floes.
200	do	USCGC *Owasco*	48 02	49 27	Radar target, possible berg.
201	do	USCGC *Owasco*	49 59	49 25	Do.
202	do	Cape Race radio	47 55	49 50	Berg.
203	Apr. 5	Bonavista radio	48 42	53 05	Seattered slob ice.
204	do	Canadian Dept. of transport by air sightings	15 miles off Cape Ray to 47°00′ 58°40′ to 46°00′ 58°00′ to 45°00′ 59°00′ to 40 miles off Canso to vicinity of Whitehead.		Outer limits of drift ice.
205	Apr. 6	do	15 miles off St. Pauls to 46°00′ 59°05′ to 45°15′ 59°35′ to 15 miles south of Country Island Light.		Do.
206	do	Bonavista radio	48 42	53 05	2 small bergs and thick slob ice.
207	do	Ice Patrol plane	48 43	53 36	Berg.
208	do	do	48 46	53 29	Do.
209	do	do	48 53	53 27	Do.
210	do	do	48 55	53 27	Do.
211	do	do	48 57	53 29	Do.
212	do	do	48 59	53 23	Do.
213	do	do	48 59	53 31	Do.
214	do	do	49 00	53 20	Do.
215	do	do	49 00	53 22	Do.
216	do	do	49 17	53 17	Do.
217	do	do	49 18	53 13	Do.
218	do	do	49 19	53 25	5 bergs.
219	do	do	49 20	53 33	Berg.
220	do	do	49 21	53 25	4 bergs.
221	do	do	49 23	53 23	Berg.
222	do	do	49 28	53 28	Do.
223	do	do	49 31	53 23	Do.
224	do	do	49 31	53 31	Do.
225	do	do	49 35	53 30	Do.
226	do	do	49 35	54 08	Do.
227	do	do	49 45	52 20	Do.
228	do	do	49 45	53 25	Do.
229	do	do	49 46	52 15	Do.
230	do	do	49 47	53 08	Do.
231	do	do	49 47	53 31	Do.
232	do	do	49 49	53 35	Do.
233	do	do	49 50	53 03	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
234	Apr. 6	Ice Patrol plane	49 50	53 05	Berg.
235	do	do	49 50	53 17	Do.
236	do	do	49 50	54 09	Do.
237	do	do	49 51	53 08	Do.
238	do	do	49 52	53 07	Do.
239	do	do	49 52	53 50	Do.
240	do	do	49 52	54 12	Do.
241	do	do	49 53	52 13	Do.
242	do	do	49 53	53 07	Do.
243	do	do	Baccalieu Island to 48 30 to 49 00	50 15 to 50 50	Limits of drift ice.
244	do	do	47 41	49 02	Berg.
245	do	do	48 02	52 55	Do.
246	do	do	48 08	51 45	Do.
247	do	do	48 10	51 51	Do.
248	do	do	48 19	51 19	Do.
249	do	do	48 22	50 42	Do.
250	do	do	48 22	52 06	Do.
251	do	do	48 05	52 35	Growler.
252	do	do	48 10	52 25	3 growlers.
253	do	do	48 12	52 09	Growler.
254	do	do	48 14	51 55	Do.
255	do	do	48 14	52 32	Do.
256	do	do	48 16	51 48	Do.
257	do	do	48 16	52 28	Do.
258	do	do	48 38	51 11	Do.
259	do	do	48 42	51 08	Do.
260	do	do	48 43	51 05	Do.
261	do	do	48 49	51 06	Do.
262	do	do	48 49	51 07	Do.
263	do	do	48 48	53 26	Do.
264	do	do	48 48	53 27	Do.
265	do	do	48 48	53 33	Do.
266	do	do	48 48	53 37	Do.
267	do	do	48 52	53 29	Do.
268	do	do	48 55	53 35	Do.
269	do	do	48 57	53 27	Do.
270	do	do	48 59	53 29	Do.
271	do	do	49 18	53 18	Do.
272	do	do	49 23	53 28	Do.
273	do	do	49 28	53 25	Do.
274	do	do	49 40	53 18	Do.
275	do	do	49 41	53 11	Do.
276	do	do	49 52	53 16	Do.
277	do	do	49 56	51 11	Do.
278	do	do	49 56	53 04	Do.
279	do	do	49 59	53 18	Do.
280	Apr. 8	Bonavista radio	48 42	53 05	Thick slob ice.
281	Apr. 9	Ice Patrol plane	Michaux Point to 45 30 to 46 15 to 46 50	60 00 to 59 01 to 59 10	Limits of drift ice.
282	do	Canadian Department of Transport	12 miles southwest of Cape Ray to 25 miles east of Scatari to 20 miles off St. Esprit to 5 miles off Green Island. Narrow strip Causo to Tor Bay.		Outer limits of drift ice.
283	do	Bonavista radio	48 42	53 05	Five miles heavy ice two miles off shore.
284	do	*Erik Banck*	47 20	59 20	Encountered field ice.
285	Apr. 10	Canadian Department of Transport	12 miles southwest of Cape Ray to 25 miles east of Scatari to 15 miles off St. Esprit to Green Island.		Outer limits of drift ice.
286	Apr. 11	Bonavista radio	48 42	53 05	Thick slob ice.
287	Apr. 12	do	48 42	53 05	Thick scattered slob ice and one large berg.
288	do	HMCS *St. Stephen*	45 09	60 07	Field of ice extending in a Northwesterly direction to horizon.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
289	Apr. 12	Canadian Department of Transport	47 10 to 46 30 to 20 miles east of Scatari to 30 miles south of St. Esprit to St. of Canso.	59 18 to 58 58	Outer limits of drift ice.
290	Apr. 13	Bonavista radio	48 42	53 05	Thick scattered slob ice and two large bergs.
291	do	HMCS *St. Stephen*	47 20	50 14	2 growlers.
292	do	*Cairnesk*	47 08	50 38	Berg.
293	do	*Cairnesk*	47 04	50 40	Growler.
294	do	Canadian Department of Transport	5 miles off Cape North to 46°50′, 59°21′, to 46°05′, 59°13′, to 15 miles SE. of Scatari to 20 miles off St. Esprit to St. of Canso.		Outer limits of drift ice.
295	do	Ice Patrol plane	Baccalieu Island to 48 20 to 49 30	51 50 to 52 00	Limits of drift ice.
296	do	do	47 04	50 39	Berg.
297	do	do	47 31	49 21	Do.
298	do	do	47 41	51 05	Do.
299	do	do	47 44	51 14	Do.
300	do	do	47 46	52 11	Do.
301	do	do	47 49	52 33	Do.
302	do	do	47 50	53 03	Do.
303	do	do	47 52	51 52	Do.
304	do	do	47 52	53 03	Do.
305	do	do	47 58	52 43	2 bergs.
306	do	do	47 59	52 26	Berg.
307	do	do	48 00	52 57	Do.
308	do	do	48 01	52 02	Do.
309	do	do	48 09	52 53	Do.
310	do	do	48 10	52 33	Do.
311	do	do	48 11	52 49	Do.
312	do	do	48 22	53 02	Do.
313	do	do	48 31	51 21	Do.
314	do	do	48 33	50 56	Do.
315	do	do	48 34	52 49	Do.
316	do	do	48 38	53 36	8 bergs.
317	do	do	48 41	52 55	Berg.
318	do	do	48 43	53 37	5 bergs.
319	do	do	48 47	50 52	Berg.
320	do	do	48 48	52 56	Do.
321	do	do	48 48	53 03	Do.
322	do	do	48 53	52 09	Do.
323	do	do	49 01	50 11	Do.
324	do	do	49 03	53 11	Do.
325	do	do	49 05	52 58	Do.
326	do	do	49 09	53 12	Do.
327	do	do	49 09	53 20	Do.
328	do	do	49 13	53 20	Do.
329	do	do	49 13	53 27	Do.
330	do	do	49 17	53 31	Do.
331	do	do	49 21	53 38	7 bergs.
332	do	do	49 22	53 31	4 bergs.
333	do	do	49 27	53 27	6 bergs.
334	do	do	49 28	52 44	Berg.
335	do	do	47 27	50 42	Growler.
336	do	do	47 31	51 06	Do.
337	do	do	47 35	52 16	Do.
338	do	do	47 37	51 40	Do.
339	do	do	47 43	51 44	Do.
340	do	do	48 18	51 53	Do.
341	do	do	48 18	51 57	Do.
342	do	do	48 19	51 32	Do.
343	do	do	48 21	51 18	Do.
344	do	do	48 21	51 28	Do.
345	do	do	48 21	51 42	Do.
346	do	do	48 22	51 42	Do.
347	do	do	48 23	51 17	Do.
348	do	do	48 23	51 23	Do.
349	do	do	48 24	51 21	Do.
350	do	do	48 25	51 42	Do.
351	do	do	48 26	51 30	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
352	Apr. 13	Ice Patrol plane	48 28	51 05	2 growlers.
353	do	do	48 28	51 21	Growler.
354	do	do	48 30	51 50	Do.
355	do	do	48 34	50 53	4 growlers.
356	do	do	48 48	50 44	3 growlers.
357	do	do	48 48	51 43	Growler.
358	do	do	48 53	52 32	Do.
359	do	do	48 55	51 12	Do.
360	do	do	48 58	50 43	Do.
361	do	do	49 13	53 19	Do.
362	do	do	49 26	52 45	Do.
363	do	do	49 26	52 49	Do.
364	Apr. 14	do	47 04	51 05	Berg.
365	do	do	47 06	50 50	Do.
366	do	do	47 41	51 06	Do.
367	do	Bonavista radio	48 42	53 05	Thick ice and large bergs.
368	do	Canadian Department of Transport	10 miles NNE from St. Pauls to 46° 10′, 59°00′, to 30 miles east of Seatari to 45°50′, 59° 26′, to 15 miles SE. of St. Esprit to St. Peters Bay.		Outer limits of drift ice.
369	Apr. 16	Bonavista radio	48 42	53 05	Large berg.
370	do	Canadian Department of Transport	47 30 to 46 10 to 10 miles south of Guion Island.	60 38 to 59 15	Outer limits of drift ice.
371	do	*Selma Thorden*	47 31	51 26	Berg.
372	do	*Senhora das Candeias*	47 09	51 20	Berg and growlers.
373	do	Cape Race radio	46 35	52 54	Small berg.
374	Apr. 17	*Sarek*	46 49	52 43	Radar target, possible berg.
375	do	*Sarek*	46 52	52 44	Do.
376	Apr. 18	Canadian Department of Transport	47 00 to 46 35 to 5 miles south of Seatari to Fourchu.	59 57 to 59 41	Outer limits of drift ice.
377	Apr. 19	Bonavista radio	48 42	53 05	Thick scattered slob ice and small berg.
378	Apr. 20	Ice Patrol plane	46 18	53 31	Radar target, possible berg.
379	do	do	47 36	50 06	Do.
380	do	do	46 15	49 55	Do.
381	do	do	46 18	49 45	Do.
382	do	do	46 21	49 20	Do.
383	do	do	46 37	49 38	Do.
384	do	do	46 53	49 11	Do.
385	do	Canadian Department of Transport	5 miles SW. of St. Pauls to 6 miles off Flat Point to Flint Island to Scatari with narrow open strip along south coast to Fourchu.		Outer limits of drift ice.
386	do	*Fort Amherst*	46 14	53 33	Radar target, possible berg.
387	Apr. 21	Bonavista radio	48 42	53 05	3 large bergs.
388	do	*Beavercove*	45 45	52 24	Radar target, possible berg.
389	do	Commercial aircraft	49 17	50 00	Medium berg.
390	Apr. 22	Bonavista radio	48 42	53 05	3 large bergs.
391	do	USS *Edisto*	47 57	52 16	Small berg.
392	do	*Erik Banck*	46 33	59 40	Loose ice 10 miles in easterly direction.
393	do	USS *Edisto*	49 12	51 58	Berg.
394	do	USS *Edisto*	49 01	51 57	Do.
395	do	USS *Edisto*	49 26	51 40	Do.
396	do	Ice Patrol plane	Cape Bonavista to 49 50 to 49 40 curving off to the northwest.	53 00 to 52 10	Limits of drift ice.
397	do	do	47 50	50 52	Berg.
398	do	do	48 22	52 48	Do.
399	do	do	48 23	51 22	Do.
400	do	do	48 24	52 52	Do.
401	do	do	48 42	52 50	Do.
402	do	do	48 48	52 10	Do.
403	do	do	48 52	49 39	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° '	° '	
404	Apr. 22	Ice Patrol plane	48 57	53 00	Berg.
405	do	do	48 58	51 18	Do.
406	do	do	48 58	51 55	Do.
407	do	do	49 03	52 56	Do.
408	do	do	49 05	51 41	Do.
409	do	do	49 09	49 50	Do.
410	do	do	49 10	50 45	Do.
411	do	do	49 20	52 44	Do.
412	do	do	49 22	52 15	Do.
413	do	do	49 25	49 48	Do.
414	do	do	49 27	51 48	Do.
415	do	do	49 29	52 26	Do.
416	do	do	49 36	52 53	Do.
417	do	do	49 39	52 33	Do.
418	do	do	49 39	52 12	Do.
419	do	do	48 15	52 45	Growler.
420	do	do	48 18	52 42	Do.
421	do	do	48 23	52 10	3 growlers.
422	do	do	48 43	52 00	Growler.
423	do	do	48 49	51 55	Do.
424	do	do	48 52	49 25	Do.
425	do	do	48 55	51 11	Do.
426	do	do	49 12	49 55	Do.
427	do	do	49 15	49 30	Do.
428	do	do	49 15	52 40	Do.
429	do	do	49 17	51 54	Do.
430	do	do	49 18	52 58	Do.
431	do	do	49 29	52 53	Do.
432	do	do	49 35	52 13	Do.
433	do	do	49 36	52 18	Do.
434	do	do	49 37	52 02	Do.
435	do	do	49 57	52 05	Do.
436	do	do	46 38	53 02	Berg.
437	do	do	46 29	51 48	Radar target, possible berg.
438	Apr. 23	Bonavista radio	48 42	53 05	4 large bergs.
439	do	Canadian Department of Transport	20 miles north East Point P.E.I. to 48°00', 60°00', to 46°30', 59°10', to Scatari, with narrow strip along south coast to Guion Island.		Outer limits of ice from west and east coast of Cape Breton.
440	Apr. 24	do	46 24 to 47 36 to 46 30 to 20 miles east of Scatari to vicinity of Guion Island.	61 30 to 59 53 to 59 40	Outside limits of ice off northwest and east coast of Cape Breton.
441	Apr. 26	Ice Patrol plane	47 13	52 48	Berg.
442	do	do	47 40	52 38	Do.
443	do	do	47 47	52 43	2 bergs.
444	do	do	48 03	52 55	3 bergs.
445	do	do	48 06	52 48	Berg.
446	do	do	48 07	52 35	Do.
447	do	do	48 09	52 50	Do.
448	do	do	48 20	53 17	5 bergs.
449	do	do	48 25	53 04	Berg.
450	do	do	48 28	52 35	Do.
451	do	do	48 30	53 02	3 bergs.
452	do	do	48 39	53 00	2 bergs.
453	do	do	48 40	50 55	Berg.
454	do	do	48 41	52 41	Do.
455	do	do	48 41	53 08	5 bergs.
456	do	do	48 43	52 56	Berg.
457	do	do	48 46	53 03	Do.
458	do	do	48 47	52 58	Do.
459	do	do	48 47	53 04	Do.
460	do	do	48 50	52 50	Do.
461	do	do	48 50	52 55	Do.
462	do	do	48 56	52 41	Do.
463	do	do	48 56	52 49	Do.
464	do	do	48 57	52 49	Do.
465	do	do	49 05	52 40	Do.
466	do	do	49 06	52 40	Do.
467	do	do	46 37	52 00	4 growlers.
468	do	do	47 41	52 07	Growler.
469	do	do	48 05	52 10	Do.
470	do	do	48 05	52 14	Do.
471	do	do	48 17	50 12	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
472	Apr. 26	Ice Patrol plane	48 25	51 51	Growler.
473	do	do	48 25	52 03	Do.
474	do	do	48 28	48 48	Do.
475	do	do	48 32	52 31	Do.
476	do	do	48 53	52 29	Do.
477	do	do	48 54	51 13	Do.
478	do	do	48 11	49 50	Radar target, possible berg.
479	do	Bonavista radio	48 42	53 05	2 large bergs.
480	do	Canadian Department of Transport	45 40 to 46 20 to	59 00 to 59 40	Widely scattered heavy pieces of ice.
481	Apr. 27	Bonavista radio	48 42	53 05	3 large bergs.
482	Apr. 28	*Esso Manhattan*	40 45	48 09	Radar target, possible berg.
			(Aerial search made in vicinity results negative.)		
483	do	Canadian Department of Transport	Few scattered strings 10 miles east of Sydney and 20 miles southeast of St. Pauls.		
484	Apr. 29	*LST 1144*	49 02	51 12	Berg.
485	do	do	49 23	50 47	Growler.
486	Apr. 30	Ice Patrol plane	47 16	52 47	Berg.
487	do	do	47 47	52 42	Do.
488	do	do	47 50	52 29	Do.
489	do	do	47 58	52 59	Do.
490	do	do	48 00	52 50	Do.
491	do	do	48 01	52 58	Do.
492	do	do	48 04	52 57	Do.
493	do	do	48 06	52 49	Do.
494	do	do	48 07	52 48	Do.
495	do	do	48 17	53 08	Do.
496	do	do	48 19	52 12	Do.
497	do	do	48 19	53 11	Do.
498	do	do	48 23	53 03	Do.
499	do	do	48 27	50 22	Do.
500	do	do	48 28	52 28	Do.
501	do	do	48 33	52 29	Do.
502	do	do	48 36	53 30	Do.
503	do	do	48 38	53 30	Do.
504	do	do	48 39	52 25	Do.
505	do	do	48 39	52 58	Do.
506	do	do	48 39	53 08	Do.
507	do	do	48 40	53 30	Do.
508	do	do	48 41	50 31	Do.
509	do	do	48 41	53 09	Do.
510	do	do	48 42	52 47	Do.
511	do	do	48 43	52 44	Do.
512	do	do	48 43	53 01	Do.
513	do	do	48 44	53 30	Do.
514	do	do	48 46	53 12	Do.
515	do	do	48 48	52 33	Do.
516	do	do	48 49	52 29	Do.
517	do	do	48 52	51 53	Do.
518	do	do	48 52	53 16	Do.
519	do	do	48 52 to 48 58 to	53 45 to 53 55	11 small bergs.
520	do	do	48 53	53 24	Berg.
521	do	do	48 54	51 22	Do.
522	do	do	48 54	53 15	Do.
523	do	do	48 55	53 23	Do.
524	do	do	48 56	53 13	Do.
525	do	do	48 58	53 19	Do.
526	do	do	48 59	50 57	Do.
527	do	do	49 09	53 09	Do.
528	do	do	49 10	52 43	Do.
529	do	do	49 13	53 02	Do.
530	do	do	49 16	53 05	Do.
531	do	do	48 07	51 51	Growler.
532	do	do	48 08	51 51	Do.
533	do	do	48 21	51 59	Do.
534	do	do	48 27	52 30	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
535	Apr. 30	Ice Patrol plane	48 35	51 21	Growler.
536	May 1	Bonavista radio	48 42	53 05	2 large bergs.
537	do	*Empress of Canada*	48 12	49 53	2 growlers.
538	do	*Empress of Canada*	4813	49 56	Berg.
539	do	*Empress of Canada*	48 14	50 08	Do.
540	do	*Irish Ash*	47 47	52 42	Do.
541	do	*Irish Ash*	47 47	52 41	3 growlers.
542	May 2	Ice Patrol plane	47 16	52 48	2 bergs.
543	do	do	47 28	52 30	Berg.
544	do	do	47 47	52 47	Do.
545	do	do	48 02	52 58	Do.
546	do	do	48 04	52 25	Do.
547	do	do	48 04	52 49	Do.
548	do	do	48 05	52 18	Do.
549	do	do	48 08	52 48	Do.
550	do	do	48 10	50 11	Do.
551	do	do	48 10	52 14	Do.
552	do	do	48 10	52 24	Do.
553	do	do	48 12	50 01	Do.
554	do	do	48 20	53 22	Do.
555	do	do	48 21	53 16	Do.
556	do	do	48 23	53 19	Do.
557	do	do	48 25	53 09	Do.
558	do	do	48 26	53 05	Do.
559	do	do	48 27	53 04	Do.
560	do	do	48 30	51 45	Do.
561	do	do	48 31	53 02	Do.
562	do	do	48 32	53 01	Do.
563	do	do	48 33	52 52	Do.
564	do	do	48 33	53 01	Do.
565	do	do	48 34	52 30	Do.
566	do	do	48 36	52 35	Do.
567	do	do	48 40	52 50	Do.
568	do	do	48 40	53 03	Do.
569	do	do	48 40	53 08	Do.
570	do	do	48 40	53 10	Do.
571	do	do	48 42	51 08	Do.
572	do	do	48 43	50 38	Do.
573	do	do	48 43	53 06	Do.
574	do	do	48 45	53 08	Do.
575	do	do	48 49	53 04	Do.
576	do	do	48 59	52 50	Do.
577	do	do	48 59	52 57	Do.
578	do	do	49 04	51 01	Do.
579	do	do	49 16	52 17	Do.
580	do	do	49 21	52 36	Do.
581	do	do	49 22	52 32	Do.
582	do	do	49 30	50 42	Do.
583	do	do	49 36	51 50	Do.
584	do	do	47 57	52 31	Growlers.
585	do	do	48 28	52 05	Do.
586	do	do	48 48	53 01	Do.
587	do	do	48 48	53 08	Do.
588	do	do	48 48	53 11	Do.
589	do	do	48 48	53 13	Do.
590	do	do	48 55	52 51	Do.
591	do	do	48 55	52 54	Do.
592	do	do	48 55	53 00	Do.
593	do	do	49 00	52 59	5 growlers.
594	do	do	49 01	52 03	Growler.
595	do	do	49 01	52 50	Do.
596	do	do	49 03	52 23	Do.
597	do	do	49 03	52 27	Do.
598	do	do	49 03	52 32	Do.
599	do	do	49 04	51 42	2 growlers.
600	do	do	49 10	52 28	Growler.
601	do	do	49 12	51 26	Do.
602	do	do	49 12	52 16	Do.
603	do	do	49 14	51 42	Do.
604	do	do	49 17	51 21	Do.
605	do	do	49 17	51 38	Do.
606	do	do	49 18	51 39	Do.
607	do	do	49 19	51 23	Do.
608	do	do	49 19	51 39	Do.
609	do	do	49 19	53 05	Do.
610	do	do	49 20	52 14	Do.
611	do	do	49 22	51 40	Do.
612	do	do	49 24	51 08	Do.
613	do	do	49 26	51 26	Do.
614	do	do	49 31	50 50	Do.
615	do	do	49 31	51 10	Do.
616	do	do	49 31	53 01	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
617	May 2	Ice Patrol plane	49 34	52 53	Growler.
618	do	do	49 42	52 17	Do.
619	do	do	49 48	52 45	Do.
620	do	do	49 48	52 48	Do.
621	do	do	49 48	52 54	Do.
622	do	do	49 51	52 18	Do.
623	do	do	49 51	52 19	Do.
624	do	do	49 51	52 27	2 growlers.
625	do	do	49 53	52 48	Growler.
626	do	do	49 57	52 20	5 growlers.
627	do	*LST 1144*	48 32	50 48	Berg.
628	do	Bonavista radio	48 42	53 05	2 large bergs.
629	May 3	Ice Patrol plane	47 28	52 35	Berg.
630	do	do	47 45	52 41	Do.
631	do	do	47 48	52 10	Do.
632	do	do	47 57	52 25	Do.
633	do	do	47 59	52 28	Tabular berg.
634	do	do	48 01	52 11	Berg.
635	do	do	48 04	52 20	Do.
636	do	do	48 11	52 31	Do.
637	do	do	48 26	52 52	Do.
638	do	do	48 26	52 57	Drydock berg.
639	do	do	48 34	52 55	Berg.
640	do	do	48 37	52 55	Do.
641	do	do	48 40	52 59	Do.
642	do	do	48 54	52 59	Do.
643	do	do	49 00	52 53	Do.
644	do	do	49 03	52 52	Do.
645	do	do	48 45	52 55	Growler.
646	do	do	48 47	52 58	Do.
647	do	Bonavista radio	48 42	53 05	3 bergs.
648	do	*Cairnavon*	48 18	49 39	Radar target, possible berg.
649	May 4	*Nova Scotia*	46 50	52 50	Do.
650	May 5	Bonavista radio	48 42	53 05	2 large bergs.
651	do	*Manchester Port*	47 51	49 39	Radar target, possible berg.
652	May 6	USCGC *Owasco*	48 39	50 23	Do.
653	do	*Storfjeld*	48 39	52 52	Berg.
654	do	*Storfjeld*	48 40	53 20	Do.
655	do	*Storfjeld*	48 48	52 46	Do.
656	do	*Storfjeld*	48 49	53 11	Do.
657	do	*Storfjeld*	48 50	52 47	Do.
658	do	*Storfjeld*	48 54	52 58	Do.
659	do	*Storfjeld*	48 56	53 14	Do.
660	do	*Storfjeld*	49 00	52 49	Do.
661	do	*Storfjeld*	49 01	53 11	Do.
662	do	*Storfjeld*	49 03	52 52	Do.
663	do	*Storfjeld*	49 05	52 49	Do.
664	do	*Storfjeld*	49 10	52 56	Do.
665	do	*Storfjeld*	49 10	53 13	Do.
666	do	*Storfjeld*	49 12	53 12	Do.
667	do	Ice Patrol plane	47 17	52 48	2 bergs aground.
668	do	do	47 30	52 35	Small berg.
669	do	do	47 48	52 42	Berg.
670	do	do	47 50	52 21	Large berg.
671	do	do	47 53	52 27	Berg.
672	do	do	Conception Bay between 47 50 and 48 00 on west shore		6 bergs.
673	do	do	47 01	46 42	Radar target, possible berg.
674	do	do	47 57	45 49	Do.
675	May 7	do	47 17	52 48	2 bergs.
676	do	do	47 21	52 44	Berg.
677	do	do	47 41	52 07	Do.
678	do	do	47 42	52 13	Do.
679	do	do	47 50	52 43	Do.
680	do	do	48 03	51 48	Do.
681	do	do	48 03	52 38	Do.
682	do	do	48 09	49 18	Do.
683	do	do	48 23	50 21	Do.
684	do	do	48 25	50 00	Do.
685	do	do	48 27	51 49	Horseshoe berg.
686	do	do	48 40	52 55	7 bergs within 5-mile radius.
687	do	do	48 47	52 19	Berg.
688	do	do	48 47	52 43	Do.
689	do	do	48 57	52 41	Do.
690	do	do	48 58	50 55	Do.
691	do	do	49 01	49 45	Do.
692	do	do	49 02	52 49	Do.
693	do	do	49 08	51 17	Do.
694	do	do	49 15	52 06	Do.

No.	Date	Name of vessel	North latitude °	′	West longitude °	′	Description
695	May 7	Ice Patrol plane	49	19	52	13	Berg.
696	do	do	49	26	50	42	Do.
697	do	do	48	05	52	42	4 growlers.
698	do	do	48	27	52	00	Do.
699	do	do	48	28	52	12	Growler.
700	do	do	48	31	51	28	Do.
701	do	do	48	32	49	57	Do.
702	do	do	48	38	52	20	3 growlers.
703	do	do	48	39	52	31	Growler.
704	do	do	48	40	52	41	Do.
705	do	do	48	42	51	06	Do.
706	do	do	48	48	52	45	3 growlers.
707	do	do	48	54	52	39	Growler.
708	do	do	48	57	51	55	2 growlers.
709	do	do	49	00	51	12	Growler.
710	do	do	49	00	52	45	Do.
711	do	do	49	04	50	35	Do.
712	do	do	49	04	51	58	4 growlers.
713	do	do	49	06	50	22	Growler.
714	do	do	49	06	51	20	Do.
715	do	do	49	11	52	37	Do.
716	do	do	49	12	52	19	Do.
717	do	do	49	13	51	40	Do.
718	do	do	49	17	52	26	Do.
719	do	do	49	26	51	58	Do.
720	do	Bonavista radio	48	42	53	05	2 large bergs.
721	May 8	do	48	42	53	05	2 small bergs.
722	May 9	Ice Patrol plane	47	50	48	40	Berg.
723	do	do	48	04	49	50	Do.
724	do	do	48	22	52	22	Do.
725	do	do	48	27	52	30	Do.
726	do	do	48	28	52	52	Do.
727	do	do	48	34	52	55	6 bergs within 5-mile radius.
728	do	do	48	35	50	18	Berg.
729	do	do	48	39	52	35	Do.
730	do	do	48	40	49	32	Do.
731	do	do	48	42	52	46	Do.
732	do	do	48	43	52	58	4 bergs within 5-mile radius.
733	do	do	48	44	53	15	5 bergs within 5-mile radius.
734	do	do	48	46	50	52	Berg.
735	do	do	48	57	52	59	Do.
736	do	do	49	00	51	37	Do.
737	do	do	49	00	53	18	Do.
738	do	do	49	04	50	12	Do.
739	do	do	49	07	50	29	Do.
740	do	do	49	07	53	29	Do.
741	do	do	49	10	53	20	Do.
742	do	do	49	15	53	25	6 bergs within 5-mile radius.
743	do	do	49	26	50	56	Berg.
744	do	do	48	32	52	05	Growler.
745	do	do	48	33	52	35	3 growlers.
746	do	do	48	41	51	00	Growler.
747	do	do	48	55	52	28	Do.
748	do	do	49	00	52	10	Do.
749	do	do	49	04	52	15	Do.
750	do	do	49	06	50	37	Do.
751	do	do	49	10	51	31	Do.
752	do	do	49	31	51	16	Do.
753	do	Bonavista radio	48	42	53	05	3 large bergs.
754	do	*Senhor Das Mercantis*	47	23	51	56	Large berg.
755	do	*Empress of Canada*	48	50	49	46	Small berg.
756	May 10	Bonavista radio	48	42	53	05	Do.
757	May 12	*Raunala*	47	39	52	34	Berg.
758	do	Bonavista radio	48	42	53	05	2 large bergs 1 mile ENE. of station
759	do	Ice Patrol plane	48	38	53	30	Berg.
760	do	do	48	45	53	04	Do.
761	do	do	48	59	53	15	Do.
762	do	do	49	07	53	16	Do.
763	do	do	49	09	53	13	Do.
764	do	do	49	12	53	13	Do.
765	do	do	49	13	53	18	Do.
766	do	do	49	16	53	20	Do.
767	do	do	49	16	53	27	Do.
768	do	do	49	18	53	29	Do.
769	do	do	49	20	53	31	Do.
770	do	do	49	21	53	25	Do.
771	do	do	49	22	53	36	Do.
772	do	do	49	29	53	45	2 bergs.
773	do	do	49	33	53	54	Do.
774	do	do	49	35	52	02	Berg.
775	do	do	49	39	53	42	Do.
776	do	do	49	39	53	45	Do.

No.	Date	Name of vessel	North latitude °	North latitude ′	West longitude °	West longitude ′	Description
777	May 12	Ice Patrol plane	49	39	53	51	Berg.
778	do	do	49	45	53	50	Do.
779	do	do	49	46	53	54	Do.
780	do	do	49	48	53	58	Do.
781	do	do	49	51	52	48	Do.
782	do	do	49	51	53	35	Do.
783	do	do	49	18	51	05	Growler.
784	do	do	49	42	53	42	Do.
785	do	do	49	55	53	38	Do.
786	do	do	49	57	53	06	Do.
787	May 13	*Cairnesk*	49	37	46	37	Do.
788	May 14	Ice Patrol plane	47	52	52	16	Berg.
789	do	do	47	55	53	03	Do.
790	do	do	48	01	52	58	Do.
791	do	do	48	02	49	19	Berg with twin pinnacles.
792	do	do	48	06	52	48	Berg aground, south end Baccalieu Island.
793	do	do	48	08	52	47	Berg aground, north end Baccalieu Island.
794	do	do	48	09	52	06	Berg.
795	do	do	48	25	53	00	7 bergs within 10-mile radius.
796	do	do	47	48	52	22	Growler.
797	do	do	48	03	52	01	Do.
798	do	do	48	04	52	25	Do.
799	do	do	48	20	50	08	Do.
800	do	do	48	22	50	30	Do.
801	do	do	48	26	52	38	Do.
802	do	do	48	28	50	14	Do.
803	do	do	48	38	50	13	Do.
804	do	do	48	42	50	35	Do.
805	do	do	48	52	49	50	2 growlers.
806	do	do	48	53	50	28	Growler.
807	do	do	48	57	49	22	Do.
808	do	do	46	58	50	15	Radar target, possible berg.
809	do	do	47	05	50	57	Do.
810	do	do	47	15	52	30	Do.
811	do	do	47	18	50	25	Do.
812	do	do	47	19	49	51	Do.
813	do	do	47	22	51	52	Do.
814	do	do	47	26	47	51	Do.
815	do	do	47	26	50	53	Do.
816	do	do	47	29	50	30	Do.
817	do	do	47	34	52	19	Do.
818	May 15	Bonavista radio	48	42	53	05	2 bergs 300 yards north and 2 bergs 200 yards ENE. of station.
819	do	*Lord Kelvin*	48	10	52	44	Small growler.
820	do	*Manchester*	48	13	48	58	Berg.
821	May 16	*Newfoundland*	47	38	52	19	Large berg.
822	do	Bonavista radio	48	42	53	05	3 bergs.
823	do	Ice Patrol plane	47	25	52	43	Berg aground.
824	do	do	47	32	52	35	Berg tabular shaped.
825	do	do	47	33	53	04	Berg.
826	do	do	47	39	52	22	Do.
827	do	do	48	20	53	20	7 bergs within 10 miles.
828	do	do	48	35	52	50	10 bergs within 10 miles.
829	do	do	48	35	53	35	5 bergs aground.
830	do	do	48	45	53	02	6 bergs within 10 miles.
831	do	do	49	20	52	40	Berg.
832	do	do	48	05	46	45	2 growlers.
833	May 17	Bonavista radio	48	42	53	05	4 bergs.
834	do	*Nova Scotia*	47	22	52	42	Growler.
835	do	do	47	28	52	38	Berg.
836	do	Ice Patrol plane	47	55	52	10	Berg and growler.
837	do	do	48	03	48	15	Berg.
838	May 18	do	48	12	53	30	4 bergs within 5 miles.
839	do	do	48	17	52	55	Berg.
840	do	do	48	19	52	46	Do.
841	do	do	48	21	52	03	Do.
842	do	do	48	27	53	05	3 bergs.
843	do	do	48	30	52	58	2 bergs.
844	do	do	48	32	52	54	Do.
845	do	do	48	36	52	56	Berg.
846	do	do	48	36	53	13	Do.
847	do	do	48	37	53	31	2 bergs.
848	do	do	48	39	53	01	3 bergs.
849	do	do	48	43	53	02	Large berg.
850	do	do	48	55	53	39	2 bergs.
851	do	do	49	05	53	10	Berg.
852	do	do	48	15	52	29	Growler.
853	do	do	48	38	53	10	Do.
854	do	*Nova Scotia*	47	40	52	30	Large berg.
855	do	Bonavista radio	48	42	53	05	2 small bergs.

No.	Date	Name of vessel	North latitude ° ′	West longitude ° ′	Description
856	May 18	*Lord Kelvin*	48 24	52 13	Berg.
857	May 19	Bonavista radio	48 42	53 05	3 small bergs.
858	May 20	*Manny*	47 46	52 19	Berg.
859	May 21	Bonavista radio	48 42	53 05	Large berg.
860	do	*Delilian*	47 53	49 00	Berg.
861	May 22	*Carton*	47 51	48 59	Do.
862	do	Cape Race radio	46 48	52 55	Do.
863	do	*Carton*	47 34	52 30	Do.
864	do	*Beaverford*	47 38	48 24	Do.
865	do	Ice Patrol plane	47 00	52 54	Do.
866	do	do	47 05	52 50	Do.
867	do	do	47 16	52 30	Do.
868	do	do	47 35	52 31	Do.
869	do	do	47 44	53 09	Do.
870	do	do	48 16	53 07	Do.
871	do	do	48 19	53 00	Do.
872	do	do	48 25	53 01	Do.
873	do	do	48 48	53 37	Do.
874	do	do	47 17	48 43	Growler.
875	do	do	47 23	51 57	Do.
876	do	do	47 55	49 00	Do.
877	do	do	47 42	48 31	Do.
878	do	do	48 22	52 33	Do.
879	do	do	48 25	53 00	4 bergs within 5-mile radius.
880	do	do	48 38	52 58	Berg.
881	do	do	48 42	53 00	Do.
882	do	do	49 16	53 25	Do.
883	do	do	48 59	51 52	2 growlers.
884	do	do	49 11	52 50	Growler.
885	do	do	49 12	53 40	Do.
886	do	do	49 15	52 41	Do.
887	do	do	49 15	53 25	Do.
888	do	do	49 55 to 49 45 to 50 00	54 00 to 53 30 to 52 20	Open pack ice.
889	do	do	48 07	53 19	Berg.
890	do	do	48 10	53 32	5 bergs within 10 miles.
891	do	do	48 20	53 20	6 bergs within 10 miles.
892	do	do	48 23	53 03	2 bergs within 2 miles.
893	do	do	48 35	53 15	2 bergs aground.
894	do	do	48 38	53 35	3 bergs within 5 miles aground.
895	do	do	48 43	53 02	2 bergs aground.
896	do	do	48 45	53 36	3 bergs within 5 miles aground.
897	do	do	48 58	53 40	2 bergs aground.
898	do	do	49 15	53 35	2 bergs off Cape Freels.
899	do	do	49 20	52 46	Berg.
900	do	do	49 23	53 42	5 bergs within 5 miles.
901	do	do	49 40	53 35	10 bergs within 5 miles.
902	do	do	49 55	53 50	2 bergs within 5 miles.
903	do	do	49 58	53 43	Do.
904	do	do	49 51	52 35	Growlers.
905	do	do	49 53	53 33	Do.
906	do	do	49 54	53 31	Do.
907	do	do	49 45	53 53	2 bergs.
908	do	do	49 45	54 05	Berg.
909	do	do	49 45	54 33	6 bergs within 5-mile radius.
910	do	do	49 48	54 08	Berg.
911	do	do	49 55	55 05	Do.
912	do	do	49 58	55 10	Do.
913	do	do	49 46	54 25	Growler.
914	do	do	49 53	54 30	5 growlers within 3-mile radius.
915	do	do	49 56	54 53	Growler.
916	do	do	49 58	54 25	Do.
917	May 23	*Imperial Halifax*	49 15	53 23	Berg.
918	do	*Imperial Halifax*	49 20	53 25	Do.
919	do	*Imperial Halifax*	49 24	53 28	Do.
920	do	*Imperial Halifax*	49 30	53 44	Do.
921	do	*Imperial Halifax*	49 31	53 41	Do.
922	do	*Imperial Halifax*	49 34	53 47	Do.
923	do	*Imperial Halifax*	49 37	53 47	Do.
924	do	*Imperial Halifax*	49 32	54 01	Do.
925	do	*Imperial Halifax*	49 32	54 03	Do.
926	do	*Imperial Halifax*	49 21	53 18	Growler.
927	do	*Imperial Halifax*	49 29	53 42	Do.
928	do	*Andwi*	47 45	48 15	Radar target, possible berg.
929	do	Bonavista radio	48 42	53 05	Large berg.
930	do	*Imperial Halifax*	48 33	52 58	Berg.
931	do	*Imperial Halifax*	48 39	53 00	Do.
932	do	*Imperial Halifax*	48 43	53 02	Do.
933	do	*Sibley Park*	47 48	48 41	Growler.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
934	May 23	*Sibley Park*	Stretching 10 miles NE. of Cape Bonavista.		Small growlers.
935	do	*Sibley Park*	49 15	53 23	Berg.
936	do	*Sibley Park*	49 20	53 25	Do.
937	do	*Sibley Park*	49 24	53 28	Do.
938	do	*Sibley Park*	49 30	53 44	Do.
939	do	*Sibley Park*	49 31	53 41	Do.
940	do	*Sibley Park*	49 34	53 47	Do.
941	do	*Sibley Park*	49 37	53 47	Do.
942	do	*Sibley Park*	49 32	54 01	Do.
943	do	*Sibley Park*	49 32	54 03	Do.
944	do	*Sibley Park*	49 21	53 18	Growler.
945	do	*Sibley Park*	49 29	53 42	Do.
946	May 24	*Caxton*	47 46	52 32	Small berg.
947	May 25	Bonavista radio	48 42	53 05	Large berg.
948	do	Cape Race radio	46 48	52 50	2 bergs.
949	May 26	Ice Patrol plane	46 45	52 59	Berg.
950	do	do	46 47	52 58	Do.
951	do	Bonavista radio	48 42	53 05	Do.
952	do	*Salacia*	47 28	49 34	Radar target, possible berg.
953	do	*Montalta*	47 03	52 43	Large berg.
954	do	*Montalta*	47 00	52 48	Do.
955	do	*Montalta*	46 54	52 47	Do.
956	do	*Montalta*	46 47	52 55	Small berg.
957	do	*Montalta*	46 52	52 47	Several growlers.
958	do	*Bolivia*	46 53	52 47	3 bergs.
959	do	*Bolivia*	46 48	52 50	2 bergs.
960	do	*Bolivia*	46 45	53 00	Growlers.
961	May 27	Bonavista radio	48 42	53 05	Berg.
962	do	*Manchester Progress*	46 41	52 57	Radar target, possible berg.
963	do	*Manchester Progress*	46 37	52 56	Do.
964	May 29	Bonavista radio	48 42	53 05	2 small bergs.
965	do	*Cairnesk*	46 35	53 06	Berg.
966	do	*Cairnesk*	46 40	53 00	Growler.
967	do	*Cairnesk*	46 47	52 57	Small berg.
968	do	*Cairnesk*	46 58	52 53	Large berg.
969	May 30	Bonavista radio	48 42	53 05	3 bergs.
970	do	Ice Patrol plane	46 55	52 39	Berg.
971	do	do	47 00	52 45	Do.
972	do	do	47 57	53 08	Do.
973	May 31	Bonavista radio	48 42	53 05	2 small bergs.
974	do	USCGC *Winnebago*	49 45	51 43	Large berg.
975	June 1	Bonavista radio	48 42	53 05	3 bergs.
976	do	*Lord Cochrane*	46 38	53 05	Several growlers.
977	do	*Lord Cochrane*	46 54	52 52	Do.
978	do	*Lord Cochrane*	46 57	52 50	Do.
979	do	*Pvt. John F. Thorson*	46 39	52 54	Growler.
980	do	*Pvt. John F. Thorson*	46 31	53 06	Large berg.
981	June 2	Bonavista radio	48 42	53 05	3 bergs.
982	do	*Hemsefjell*	46 33	53 05	Berg and growlers.
983	do	*Lismoria*	47 04	52 38	Radar target, possible berg.
984	do	*Lismoria*	46 54	52 43	Berg.
985	do	*Lismoria*	46 55	52 45	Do.
986	do	*Lismoria*	46 35	53 08	Do.
987	do	*Caxton*	49 56	53 28	Growler.
988	do	*Hemsefjell*	47 25	49 38	Radar target, possible berg.
989	do	*Hemsefjell*	47 13	50 18	6 radar targets, possible bergs.
990	do	*Caxton*	49 59	52 29	Growler.
991	do	Ice Patrol plane	49 24	51 48	Berg.
992	do	do	49 35	53 52	Do.
993	do	do	49 48	54 00	4 bergs in a 5-mile radius.
994	do	do	49 35	53 37	Growler.
995	do	do	46 50	52 56	Berg.
996	do	do	46 53	52 48	Do.
997	do	do	46 53	52 50	Do.
998	do	do	46 55	52 47	Do.
999	do	do	46 55	52 55	Small berg.
1000	do	do	47 56	53 38	Berg.
1001	do	do	48 21	53 18	Do.
1002	do	do	48 27	53 00	Do.
1003	do	do	48 38	53 00	Do.
1004	do	do	48 42	53 02	2 bergs.
1005	do	do	49 20	51 50	Berg.
1006	do	do	46 52	52 52	15 growlers.
1007	do	do	46 50	52 20	Radar target, possible berg.
1008	do	do	47 18	52 18	Do.
1009	do	do	49 18	50 21	Do.
1010	do	*Evergreen (IP)*	46 34	53 07	Berg and growlers.
1011	June 3	Ice Patrol plane	49 45	54 20	2 bergs.
1012	do	do	49 55	55 20	Growler.
1013	do	Bonavista radio	48 42	53 05	3 bergs.

No.	Date	Name of vessel	North latitude °	North latitude '	West longitude °	West longitude '	Description
1014	June 3	*Tudor Prince*	46	34	53	06	Berg and growlers.
1015	June 4	Cape Race radio	46	33	53	06	Berg.
1016	do	Bonavista radio	48	42	53	05	2 bergs.
1017	do	*Samaria*	46	32	53	00	Berg.
1018	do	*Samaria*	46	34	52	48	Growlers.
1019	do	*Samaria*	46	32	52	57	Do.
1020	do	*Erica*	46	33	53	06	Berg.
1021	June 5	*Nova Scotia*	47	01	52	46	Do.
1022	do	do	46	56	52	49	Do.
1023	do	do	46	37	52	52	Radar target, possible berg.
1024	do	Bonavista radio	48	42	53	05	Berg.
1025	do	*Laidure*	47	49	52	53	Large berg.
1026	do	*Laidure*	47	51	52	42	2 growlers.
1027	do	Ice Patrol plane	47	39	53	07	Berg.
1028	do	do	47	45	52	55	Do.
1029	do	do	48	55	51	25	Do.
1030	do	do	47	53	52	46	Growler.
1031	June 6	Bonavista radio	48	42	53	05	Berg.
1032	June 7	*Laidure*	47	53	52	49	Do.
1033	do	*Laidure*	48	50	50	55	Do.
1034	do	*Irish Poplar*	46	37	52	43	Do.
1035	do	Ice Patrol plane	48	58	51	00	Do.
1036	do	*Beaverdell*	46	34	52	44	Radar target, possible berg.
1037	do	*Evergreen (IP)*	48	57	50	58	Berg and growler.
1038	June 8	*Franconia*	46	35	52	44	Radar target, possible berg.
1039	do	*Svaneholm*	46	55	52	45	Large berg.
1040	do	*Evergreen (IP)*	48	55	50	44	Berg.
1041	do	*Essberger*	46	54	52	51	Large berg.
1042	June 9	*Townshend*	46	50	52	48	Berg and several growlers.
1043	do	*Townshend*	46	59	52	48	Berg.
1044	do	Cape Race radio	47	01	52	42	Do.
1045	do	USCGC *Sorrel*	46	30	52	28	Growler.
1046	do	*Asia*	46	33	52	26	Do.
1047	June 10	Ice Patrol plane	46	55	52	49	Berg.
1048	do	do	47	02	52	50	Do.
1049	do	do	47	05	52	48	Do.
1050	do	do	47	44	52	39	Do.
1051	do	do	48	40	50	19	Do.
1052	do	*Manchester Trader*	46	51	52	43	Do.
1053	do	*Manchester Trader*	46	55	52	45	Do.
1054	June 11	*Wabana*	47	44	52	40	Large berg.
1055	do	Cape Race radio	46	42	52	48	Do.
1056	June 13	*Svaneholm*	47	46	52	36	Do.
1057	do	*Svaneholm*	47	01	52	50	3 bergs.
1058	do	*Prins William 3rd*	48	40	49	33	Small berg.
1059	do	Bonavista radio	48	42	53	05	Do.
1060	June 14	*Silgan*	48	44	49	17	Berg.
1061	June 16	*Evergreen (IP)*	46	44	52	44	Do.
1062	June 17	*Franconia*	46	39	52	47	Small berg.
1063	June 18	*Scythia*	47	22	52	43	Do.
1064	June 19	*Lapland*	47	28	48	16	Growler.
1065	do	*Bassano*	46	14	52	44	Berg.
1066	do	*Beaverford*	46	20	52	56	Do.
1067	June 20	Cape Race radio	46	45	52	50	Large berg.
1068	do	USCG *Aircraft*	48	13	52	48	Berg.
1069	do	USCG *Aircraft*	46	48	52	53	Do.
1070	do	USCG *Aircraft*	46	19	53	00	Do.
1071	do	USCG *Aircraft*	46	52	52	52	Large berg.
1072	June 22	*Lovstad*	46	19	53	02	Berg.
1073	June 24	*Maria Teresa*	46	50	53	51	Small berg.
1074	do	*Jan*	46	13	53	55	Do.
1075	June 26	*Simeon G. Reed*	42	15	47	51	3 small growlers.
			to				
			42	14	47	52	
1076	July 4	*Nootka*	46	56	52	47	Growler.
1077	July 5	*Ocean Volunteer*	48	37	43	48	14 radar targets.
1078	July 6	USCGC *Absecon*	46	52	52	51	Growler.
1079	July 19	USAT *Pvt. Joe P. Martinez*	49	54	52	33	Berg.
1080	July 23	*Polar Maid*	49	40	52	59	Do.
1081	Sept. 13	*Hydro*	49	16	52	40	Berg and growler.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
Jan. 30	Hydro, Washington	59 00	36 00	Large berg.
Feb. 16	HMCS *St. Stephen*	52 00	50 58	Scattered field ice of close pack in open pack and brash ice with scattered small bergs, 50 to 80 percent eastern limit from this position southeast to 50°40′ W. From eastern limit extends to horizon and beyond judging from ice blink.
Feb. 19	USS *Edisto*	59 00	43 20	3 large bergs and 1 small berg.
Feb. 25	Battle Harbor radio	52 15	55 25	Berg.
Feb. 26	do	52 15	55 33	Field ice extending 5 miles from Double Island.
Do	*FS-103*	50 30	51 10	Thick slob ice.
Feb. 27	USS *Edisto*			Heavy field ice with bergs 6- by 12-mile axis SSW. centered at 60°34′, 42°02′. Innumerable drifting bergs sighted from 59°45′, 40°49′ to westward.
Do	Battle Harbor radio	52 18 to 52 15 to 52 13	55 35 55 30 55 35	Outer limits of field ice.
Do	USS *Edisto*	59 36	42 06	Ice 1 foot thick dark colored fast ice along coast. Nine bergs of average size 200 feet long 50 feet high, tabular in shape.
Feb. 28	USS *Edisto*	60 41 to 59 59 to 59 38 to 59 44 thence northward.	42 06 42 20 41 50 40 27	Limits of pack ice. Numerous bergs to 30 miles south and east of pack.
Mar. 3	USCGC *Campbell*	58 50	37 40	Small berg and several growlers.
Do	USCGC *Campbell*	59 18	36 26	Radar contact, possible berg.
Do	USCGC *Campbell*	59 29	36 31	Do.
Do	USCGC *Campbell*	59 34	36 54	Do.
Do	USCGC *Campbell*	60 07	36 02	Do.
Do	USCGC *Campbell*	59 41	36 24	Large growler.
Mar. 1	Ice Patrol plane	49 37 to 50 50 to 51 10 to 51 00 to 51 45	51 38 51 32 50 20 52 00 53 25	Outer limits of drift ice.
Do	do	49 18 to 49 35 to 50 32 to 50 40 to 51 15	52 48 52 27 53 30 54 15 54 25	Consolidated pack.
Do	do	50 04	53 02	Berg.
Do	do	50 05	53 47	Do.
Do	do	50 10	53 20	Do.
Do	do	50 12	54 05	Do.
Do	do	50 13	53 52	Do.
Do	do	50 15	54 02	Do.
Do	do	50 18	53 38	Do.
Do	do	50 19	53 41	Do.
Do	do	50 20	53 09	Do.
Do	do	50 23	54 19	Do.
Do	do	50 25	54 21	Do.
Do	do	50 26	53 30	Do.
Do	do	50 27	53 40	Do.
Do	do	50 28	52 49	Do.
Do	do	50 29	52 45	Do.
Do	do	50 30	53 35	Do.
Do	do	50 32	52 57	Do.
Do	do	50 32	54 31	Do.
Do	do	50 33	53 25	Do.
Do	do	50 35	53 00	Do.
Do	do	50 35	55 00	Do.
Do	do	50 36	52 09	Do.
Do	do	50 36	55 05	Do.

Date	Name of vessel	North latitude		West longitude		Description
		°	′	°	′	
Mar. 4	Ice Patrol plane	50	38	54	45	Berg.
Do	do	50	40	54	08	Do.
Do	do	50	40	54	23	Do.
Do	do	50	41	53	02	Do.
Do	do	50	42	52	45	Do.
Do	do	50	42	54	33	Do.
Do	do	50	43	54	39	Do.
Do	do	50	44	53	13	Do.
Do	do	50	44	55	07	Do.
Do	do	50	46	52	05	Do.
Do	do	50	46	54	20	Do.
Do	do	50	50	53	08	Do.
Do	do	50	52	54	01	2 bergs.
Do	do	50	52	54	11	Berg.
Do	do	50	53	53	28	Do.
Do	do	50	56	54	06	Do.
Do	do	50	57	53	00	Do.
Do	do	50	57	54	03	Do.
Do	do	50	58	54	11	Do.
Do	do	51	00	54	05	Do.
Do	do	51	02	53	40	Do.
Do	do	51	03	54	08	Do.
Do	do	51	08	54	31	Do.
Do	do	51	09	53	38	Do.
Do	do	51	15	53	37	Do.
Do	do	51	17	54	38	Do.
Do	do	51	22	55	08	Do.
Do	do	52	38	55	20	Do.
Do	do	50	14	53	53	Growler.
Do	do	50	20	52	11	Do.
Do	do	50	20	53	25	Do.
Do	do	50	26	51	55	Do.
Do	do	50	28	53	12	Do.
Do	do	50	38	54	28	Do.
Do	do	50	39	52	39	Do.
Do	do	50	40	52	12	Do.
Do	do	50	40	54	10	Do.
Do	do	50	43	52	20	Do.
Do	do	50	43	52	25	Do.
Do	do	50	45	54	20	Do.
Do	do	50	46	52	10	Do.
Do	do	50	49	52	00	Do.
Do	do	50	55	51	50	5 growlers.
Do	do	50	59	53	19	Growler.
Do	do	51	25	51	35	Do.
Mar. 15	do	50	05	54	24	Berg.
Do	do	50	13	52	30	Do.
Do	do	50	15	53	16	Do.
Do	do	50	16	51	42	Do.
Do	do	50	18	52	26	Do.
Do	do	50	19	52	34	Do.
Do	do	50	20	53	30	Do.
Do	do	50	22	53	29	Do.
Do	do	50	23	53	33	Do.
Do	do	50	23	53	58	Do.
Do	do	50	24	53	53	Do.
Do	do	50	25	52	28	Do.
Do	do	50	26	52	31	Do.
Do	do	50	30	54	00	Do.
Do	do	50	31	53	30	Do.
Do	do	50	32	52	55	Do.
Do	do	50	32	53	50	Do.
Do	do	50	35	52	28	Do.
Do	do	50	38	54	00	Do.
Do	do	50	38	54	05	Do.
Do	do	50	41	53	43	Do.
Do	do	50	41	53	45	Do.
Do	do	50	43	52	49	Do.
Do	do	50	43	52	56	Do.
Do	do	50	45	53	05	Do.
Do	do	50	46	54	15	Do.
Do	do	50	47	54	16	Do.
Do	do	50	51	52	40	Do.
Do	do	50	51	53	19	Do.
Do	do	50	53	53	55	Do.
Do	do	50	55	52	45	Large horseshoe-shaped berg.
Do	do	50	55	53	49	Berg.
Do	do	50	59	52	51	Do.
Do	do	51	00	53	00	Do.
Do	do	51	03	52	54	Do.
Do	do	51	05	52	18	Do.
Do	do	51	05	52	58	Do.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
Mar. 15	Ice Patrol plane	51 09	52 54	Berg.
Do	do	51 10	52 12	Do.
Do	do	51 10	52 56	Do.
Do	do	50 07	52 07	Growler.
Do	do	50 08	52 05	Do.
Do	do	50 09	51 38	Do.
Do	do	50 09	51 42	Do.
Do	do	50 15	51 39	Do.
Do	do	50 20	53 35	Do.
Do	do	50 24	53 31	Do.
Do	do	50 25	53 40	Do.
Do	do	50 26	54 00	Do.
Do	do	50 44	54 05	Do.
Do	do	50 48	54 05	Do.
Do	do	50 48	54 11	Do.
Do	do	50 51	54 06	Do.
Do	do	50 53	53 04	Do.
Do	do	50 54	52 59	Do.
Do	do	50 55	53 56	Do.
Do	do	50 55	53 57	Do.
Do	do	50 55	54 01	Do.
Do	do	50 55	54 02	Do.
Do	do	50 59	53 05	Do.
Do	do	51 00	54 00	Do.
Do	do	51 15	52 45	Do.
Do	do	51 17	52 45	Do.
Do	do	51 19	52 08	Do.
Do	do	51 19	52 31	Do.
Do	do	51 19	52 45	Do.
Do	do	51 20	52 32	Do.
Do	do	51 21	52 45	Do.
Do	do	51 22	52 31	Do.
Do	do	51 23	52 19	Do.
Mar. 18	do	Cape Bonavista to 49 30 to 50 50 to 51 30	 50 20 51 05 50 30	Outer limits of drift ice.
Do	do	50 12	49 12	Berg.
Do	do	50 05	48 43	Growler.
Do	do	50 08	48 37	Do.
Do	do	50 25	51 17	Do.
Do	do	51 10 to 51 30 to 51 52 to 52 02 to 51 56 to 52 03 to 52 02 to 52 30	50 45 50 45 51 00 51 26 52 00 52 30 53 00 53 15	Outer limits of drift ice.
Do	do	A line bearing 047° T. from Battle Harbor to the limit of visibility.		Northern limits of drift ice.
Do	do	50 40 to 51 06 to 51 35 to 51 58	53 30 54 00 53 42 54 11	Limits of consolidated pack.
Do	do	50 02	55 11	Berg.
Do	do	50 30	55 13	Do.
Do	do	50 35	55 15	Do.
Do	do	50 36	53 55	Do.
Do	do	50 37	53 26	Do.
Do	do	50 39	55 37	Do.
Do	do	50 41	55 32	Do.
Do	do	50 42	54 01	Do.
Do	do	50 43	53 49	Do.
Do	do	50 45	53 45	Do.
Do	do	50 45	53 43	Do.
Do	do	50 46	53 42	Do.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
Mar. 18	Ice Patrol plane	50 47	53 59	Berg.
Do	do	50 51	54 39	Do.
Do	do	50 55	52 36	Do.
Do	do	50 55	52 50	Do.
Do	do	50 55	55 11	Do.
Do	do	50 56	54 19	Do.
Do	do	50 57	54 14	Do.
Do	do	51 00	54 44	Do.
Do	do	51 03	53 47	Do.
Do	do	51 05	52 42	Do.
Do	do	51 05	54 10	Do.
Do	do	51 06	54 25	Do.
Do	do	51 06	55 07	Do.
Do	do	51 07	52 20	Do.
Do	do	51 08	53 13	Do.
Do	do	51 12	52 54	Do.
Do	do	51 12	53 49	Do.
Do	do	51 13	52 51	Do.
Do	do	51 14	51 56	Do.
Do	do	51 14	54 42	Do.
Do	do	51 16	52 48	Do.
Do	do	51 18	52 43	Do.
Do	do	51 22	54 22	Do.
Do	do	51 26	54 26	Do.
Do	do	51 32	54 43	Do.
Do	do	51 38	55 08	Do.
Do	do	51 40	55 28	Do.
Do	do	51 41	55 31	Do.
Do	do	51 42	54 12	Do.
Do	do	51 43	54 03	2 bergs.
Do	do	51 44	51 48	Berg.
Do	do	51 47	54 46	Do.
Do	do	51 51	54 42	Do.
Do	do	51 55	54 45	Do.
Do	do	51 59	55 21	Do.
Do	do	52 03	53 37	Do.
Do	do	50 46	55 11	Growler.
Do	do	51 02	53 45	Do.
Do	do	51 05	52 52	Do.
Do	do	51 14	54 58	Do.
Do	do	51 21	51 01	Do.
Do	do	51 23	51 38	Do.
Do	do	51 23	52 27	Do.
Do	do	51 25	52 32	Do.
Do	do	51 26	54 29	Do.
Do	do	51 34	54 02	Do.
Do	do	51 35	54 00	Do.
Do	do	51 40	51 30	Do.
Do	do	51 45	55 25	Do.
Do	do	51 50	55 22	Do.
Do	do	51 52	52 01	Do.
Do	do	51 56	51 41	Do.
Do	do	51 58	51 43	Do.
Do	do	52 05	51 32	Do.
Do	do	52 08	52 35	Do.
Do	do	52 11	51 51	Do.
Do	do	52 12	51 32	Do.
Mar. 20	USS *Edisto*	54 18	57 36	Drift ice.
Do	USS *Edisto*	54 18	57 18	Do.
Do	USS *Edisto*	53 54	57 00	Do.
Mar. 21	USCGC *Mendota*	51 30 to 51 45	50 30 50 20	Eastern limits scattered drift ice.
Mar. 23	Ice Patrol plane	48 50 to 50 45 to 51 40	50 00 49 55 40 35	Limits of drift ice.
Do	do	50 12	50 45	Berg.
Do	do	50 19	51 07	Do.
Do	do	50 55	49 44	Do.
Do	do	51 06	50 33	Do.
Do	do	51 07	51 13	Large horseshoe berg.
Do	do	51 11	51 03	Berg.
Do	do	51 11	51 31	Do.
Do	do	51 13	51 22	Do.
Do	do	51 16	51 11	Do.
Do	do	51 19	51 35	Do.
Do	do	51 22	51 20	Do.
Do	do	50 00	50 32	Growler.
Do	do	50 05	50 07	Do.
Do	do	50 10	49 58	Do.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
Mar. 23	Ice Patrol plane	50 10	51 18	Growler.
Do	do	50 15	50 06	Do.
Do	do	50 43	49 53	Do.
Do	do	50 53	49 27	Do.
Do	do	50 57	59 38	Do.
Do	do	50 58	49 35	Do.
Do	do	51 03	49 35	Do.
Do	do	51 06	50 12	Do.
Do	do	51 11	50 53	Do.
Do	do	51 18	51 20	Do.
Do	do	51 19	51 21	Do.
Do	USCGC *Bibb*	50 43	51 31	Drift ice.
Do	USCGC *Bibb*	50 10	51 28	2 Radar targets, possible bergs.
Mar. 30	USCGC *Sorrel*	59 28	44 46	Concentrated heavy pack ice.
Mar. 31	Ice Patrol plane	50 09	53 46	Berg.
Do	do	50 11	50 08	Do.
Do	do	50 11	53 22	Do.
Do	do	50 12	52 52	Do.
Do	do	50 14	53 01	Do.
Do	do	50 16	53 11	Do.
Do	do	50 16	53 30	Do.
Do	do	50 21	53 00	Do.
Do	do	50 22	53 08	Do.
Do	do	50 23	53 28	Do.
Do	do	50 26	52 59	Do.
Do	do	50 27	53 06	Do.
Do	do	50 30	50 43	Do.
Do	do	50 30	53 02	Do.
Do	do	50 36	52 47	Do.
Do	do	50 36	52 55	Do.
Do	do	50 37	51 22	Drydock-shaped berg.
Do	do	50 42	53 17	Berg.
Do	do	50 43	53 33	Do.
Do	do	50 46	53 25	Do.
Do	do	50 47	52 49	Do.
Do	do	50 48	52 49	Do.
Do	do	50 50	52 00	Do.
Do	do	50 52	51 54	Do.
Do	do	50 55	53 31	Do.
Do	do	50 59	53 30	Do.
Do	do	51 01	53 00	Do.
Do	do	51 02	52 45	Do.
Do	do	51 03	53 04	Do.
Do	do	51 04	52 55	Do.
Do	do	51 04	53 19	Do.
Do	do	50 13	52 07	Growler.
Do	do	50 15	52 28	Do.
Do	do	50 17	52 53	Do.
Do	do	50 21	51 30	Do.
Do	do	50 21	51 43	3 growlers.
Do	do	50 21	52 34	Growler.
Do	do	50 22	51 11	Do.
Do	do	50 34	53 04	Do.
Do	do	50 42	52 01	Do.
Do	do	50 43	52 06	Do.
Do	do	50 43	53 25	Do.
Do	do	50 45	51 59	Do.
Do	do	50 55	53 08	Do.
Apr. 2	USCGC *Sorrel*	59 36	44 18	Consolidated pack ice.
Apr. 4	USCGC *Sorrel*	59 38 to 59 38 to 59 34 to 59 34	45 10 to 44 45 to 44 30 to 43 45	Southern limits of consolidated pack ice.
Do	USCGC *Sorrel*	59 43	44 00	Field ice.
Do	USCGC *Sorrel*	59 36 to 59 30 to 59 24 to 59 47	44 00 to 44 30 to 44 42 to 45 06	Southern limits of consolidated pack ice.
Apr. 5	USCGC *Sorrel*	59 12 to 59 17	41 47 to 45 35	Do.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
Apr. 6	Ice Patrol plane	49 52	52 00	Limits of drift ice.
		to 49 55	52 45	
		to 51 00	52 30	
		to 51 00	53 30	
		to 52 20	52 50	
Do	do	50 00	53 09	Berg.
Do	do	50 00	53 30	Do.
Do	do	50 00	53 35	Do.
Do	do	50 04	53 04	Do.
Do	do	50 04	54 03	Do.
Do	do	50 09	53 43	Do.
Do	do	50 09	54 12	Do.
Do	do	50 09	54 18	Do.
Do	do	50 26	53 30	Do.
Do	do	50 30	53 28	Do.
Do	do	50 31	53 52	Do.
Do	do	50 31	54 11	Do.
Do	do	50 32	53 50	Do.
Do	do	50 35	53 50	Do.
Do	do	50 36	53 41	Do.
Do	do	50 38	53 20	Do.
Do	do	50 45	53 20	Do.
Do	do	50 47	53 28	Do.
Do	do	50 50	53 00	Do.
Do	do	50 53	53 13	Do.
Do	do	50 56	54 20	Do.
Do	do	50 58	52 50	Do.
Do	do	51 08	54 18	Do.
Do	do	51 42	54 31	Do.
Do	do	52 12	54 21	Do.
Do	do	52 21	54 16	Do.
Do	do	52 26	53 56	Do.
Do	do	52 26	53 59	Do.
Do	do	50 15	52 41	Growler.
Do	do	50 17	53 03	Do.
Do	do	50 24	54 09	Do.
Do	do	50 30	53 25	Do.
Do	do	50 35	54 15	Do.
Do	do	50 53	52 46	Do.
Do	do	51 29	54 00	Do.
Do	do	51 29	54 06	Do.
Do	do	51 32	53 24	Do.
Do	do	51 37	54 18	Do.
Do	do	51 56	54 04	Do.
Apr. 22	do	50 05	51 45	Do.
Do	do	50 08	52 04	Do.
Apr. 26	USS *Edisto*	59 30	46 28	Heavy pack ice with scattered bergs. Strip running NW. 5 miles wide.
Apr. 30	HMCS *St. Stephen*	56 37	50 53	Berg.
Do	USS *Edisto*	60 15	49 20	Western limit of ice strip.
May 1	HMCS *St. Stephen*	56 42	51 30	Berg.
Do	HMCS *St. Stephen*	56 38	51 21	Do.
Do	Ice Patrol plane	50 52	56 00	Limits of pack and sea ice.
		to 50 20	55 00	
		to 50 20	53 30	
		to 50 40	53 30	
		to 50 40	54 35	
		to 53 10	54 40	
		to 53 15	53 40	
		to 54 50	55 00	
		to 54 43	55 45	
		to 56 00	57 50	
		to 57 30	59 40 and north.	
Do	do	Cape Freels		2 bergs off east coast.
Do	do	Fogo Island		4 bergs off east coast.
Do	do	Notre Dame Bay		18 bergs in area.
Do	do	Gray Islands		4 bergs close to shore.

Table of Ice and Obstruction Reports, North of 50° N., 1949—Continued

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
May 1	Ice Patrol plane	51 20	54 58	Berg.
Do	do	Belle Isle		3 bergs south of; 2 bergs north of.
Do	do	52 25	53 37	Berg and several growlers.
Do	do	Stony Island, Labrador		3 bergs close to shore.
Do	do	Spotted Island		4 bergs close to shore.
Do	do	South Wolf Island		5 bergs 10 miles off coast.
Do	do	Cape North		4 bergs 10 miles off coast.
Do	do	53 55	54 59	Berg.
Do	do	53 57	54 58	Do.
Do	do	54 10	55 20	Do.
Do	do	54 22	55 27	Do.
Do	do	54 25	55 31	Do.
Do	do	Cape North to Cape Harrison		14 bergs within 10 miles of coast.
Do	do	54 40	56 05	3 bergs.
Do	do	55 10	56 20	15 bergs within 20 mile-radius.
Do	do	55 23	57 13	Berg.
Do	do	55 40	57 15	10 bergs within 10-mile radius.
Do	do	55 28	58 30	8 bergs.
Do	do	56 00	58 15	25 bergs within 20-mile radius.
Do	do	56 10	59 25	10 bergs within 5-mile radius.
Do	do	56 25	59 05	Berg.
Do	do	56 28	48 45	4 bergs.
Do	do	56 45	59 25	20 bergs within 15-mile radius.
Do	do	56 47	60 27	Berg.
Do	do	57 05	60 35	2 bergs.
Do	do	57 25	60 00	23 bergs within 15-mile radius.
Do	do	57 35	59 28	Berg.
Do	do	57 53	60 23	Do.
Do	do	57 54	61 10	2 bergs.
Do	do	58 02	59 10	Berg.
Do	do	58 12	60 15	Do.
Do	do	58 13	60 31	Do.
Do	do	58 13	61 01	2 bergs.
Do	do	58 14	60 50	Berg.
Do	do	58 35	60 02	Do.
Do	do	58 36	59 50	Do.
Do	HMCS *St. Stephen*	56 42	51 30	Do.
Do	HMCS *St. Stephen*	56 38	51 21	Do.
May 2	Ice Patrol plane	50 28 to 50 37	53 25 to 53 21	Patch of drift ice 3 to 5 miles wide.
Do	do	50 04	52 42	Berg.
Do	do	50 06	53 15	Do.
Do	do	50 00	52 51	Growler.
Do	do	50 00	53 00	Do.
Do	do	50 02	52 22	Do.
Do	do	50 07	52 18	Do.
Do	do	50 09	52 17	Do.
Do	do	50 09	52 45	Do.
Do	do	50 09	52 52	Do.
Do	do	50 09	52 58	Do.
Do	do	50 15	52 54	Do.
Do	do	50 15	53 00	Do.
Do	do	50 18	53 07	Do.
Do	do	50 19	52 57	2 growlers.
Do	do	50 20	52 47	Growler.
Do	do	50 21	52 41	Do.
Do	do	50 38	52 48	Do.
May 3	do	From beach eastward to 50 40 with a narrow tongue projecting southward to 50 15	53 25 … 53 40	Band of drift ice 20 miles wide.
May 6	USS *Canisteo*	54 04	48 40	Growler.
May 11	USS *Canisteo*	60 13	53 12	Berg.
Do	USS *Canisteo*	59 57	52 22	Do.
Do	USS *Canisteo*	59 51	53 11	Do.
Do	USS *Canisteo*	59 40	53 11	Do.
Do	USS *Canisteo*	59 23	53 02	Do.
Do	USS *Canisteo*	59 14	53 04	Do.
Do	USS *Canisteo*	59 32	53 01	Growler.
Do	USS *Canisteo*	59 31	53 06	Do.
Do	USS *Canisteo*	59 33	52 32	Do.
Do	USS *Canisteo*	57 47	52 25	Berg.
Do	USS *Canisteo*	57 22	51 54	Do.
May 12	Ocean weather station Baker.	56 11	50 46	Do.
Do	Ice Patrol plane	50 05	53 42	Do.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
May 12	Ice Patrol plane	50 01	53 31	Growler.
Do	do	50 02	53 20	Do.
Do	do	50 03	53 21	Do.
Do	do	50 05	53 12	Do.
Do	do	50 06	53 11	Do.
Do	do	Notre Dame Bay		14 bergs.
Do	do	Bell Island		6 bergs.
Do	do	50 53	54 57	Bergs.
Do	do	51 09	55 31	Berg.
Do	do	51 12	54 47	Do.
Do	do	51 16	55 33	Do.
Do	do	51 18	55 10	Do.
Do	do	51 19	54 35	Do.
Do	do	51 19	55 06	Do.
Do	do	51 23	55 25	Do.
Do	do	51 30	54 52	3 bergs.
Do	do	Cape Bauld		Do.
Do	do	Belle Isle		4 bergs.
Do	do	50 35	55 22	Growler.
Do	do	50 52	54 13	Do.
Do	do	50 56	54 12	Do.
Do	do	50 57	54 55	4 growlers.
Do	do	51 20	54 35	3 growlers.
Do	do	51 37	54 59	Growler.
May 13	Ocean weather station Baker.	56 21	50 30	Berg.
May 16	USCGC *Owasco*	58 08	45 01	Do.
May 23	Ice Patrol plane	50 01	55 22	Do.
Do	do	50 03	55 30	Do.
Do	do	50 05	54 28	Do.
Do	do	50 09	54 42	Do.
Do	do	50 45	54 52	Do.
Do	do	50 46	55 10	Do.
Do	do	50 54	54 00	Do.
Do	do	50 56	54 55	Large horseshoe berg.
Do	do	50 58	54 45	Berg.
Do	do	51 02	55 20	Do.
Do	do	51 08	53 09	Small berg.
Do	do	51 12	54 39	Berg.
Do	do	51 22	54 09	Do.
Do	do	50 02	54 30	Growler.
Do	do	50 02	54 38	Do.
Do	do	50 03	54 48	Do.
Do	do	50 04	55 16	Do.
Do	do	50 05	54 25	Do.
Do	do	50 06	54 43	Do.
Do	do	50 09	54 53	Do.
Do	do	50 13	55 02	Do.
Do	do	50 15	54 21	Do.
Do	do	50 17	54 09	Do.
Do	do	50 17	55 07	Do.
Do	do	50 21	55 15	Do.
Do	do	50 24	54 45	Do.
Do	do	50 24	54 55	Do.
Do	do	50 32	55 19	2 growlers.
Do	do	50 49	54 47	Do.
Do	do	50 55	55 15	4 growlers within 5-mile radius.
Do	do	50 57	55 00	2 growlers.
Do	do	51 05	55 15	5 growlers within 5-mile radius.
Do	do	51 12	55 03	Growler.
Do	do	51 14	54 29	Do.
Do	do	51 17	54 40	Do.
Do	do	51 30	53 40	Radar target, possible berg.
Do	do	51 31	54 28	Do.
Do	do	51 33	54 15	Do.
Do	do	51 43	54 14	Do.
Do	do	51 45	52 51	Do.
Do	do	50 00 to 50 20 to 51 35	54 00 to 53 20 to 52 50	Outer limits of drift ice.
June 2	USCGC *Winnebago*	50 04	52 20	Berg.
Do	*Caxton*	50 01	52 34	Small berg.
Do	Ice Patrol plane	50 05	52 40	Berg.
Do	do	50 50	53 23	Do.
Do	do	50 55	53 58	Do.
Do	do	50 46	53 19	Growler.
Do	USCGC *Winnebago*	52 25	51 57	Scattered growlers.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
June 3	Ice Patrol plane	50 47 to 51 35 to 51 55 to 52 22 and thence Northwest.	55 27 to 55 18 to 54 50 to 54 50	Outer limits of consolidated pack ice.
Do	do	50 01	55 26	Berg.
Do	do	50 40	55 32	Do.
Do	do	51 24	55 27	Do.
Do	do	51 28	54 43	Do.
Do	do	51 33	54 53	Do.
Do	do	51 37	54 46	Do.
Do	do	52 12	54 35	Do.
Do	do	50 40	55 35	Growler.
Do	do	50 47	55 01	Do.
Do	do	51 03	55 32	11 growlers in 5-mile radius.
Do	do	51 25	55 00	Growler.
Do	do	51 30	55 25	2 growlers.
Do	do	54 34	55 10	Growler.
Do	do	51 47	55 21	20 small bergs and growlers in a 10-mile radius.
Do	do	52 05	55 15	50 small bergs and growlers in a 10-mile radius.
Do	do	52 20	55 00	12 small bergs and growlers in a 10-mile radius.
Do	do	52 30	54 45	11 growlers in a 3-mile radius.
Do	do	52 33	54 24	Growler.
Do	OYJT	59 55	49 55	Berg.
Do	Ocean weather station ship Baker.	56 02	54 01	Large berg and growler.
June 9	Radio Grondal			Close pack 7 miles west of Storo. Storis width reported 15 miles. Close pack begins 10 miles seaward of Simiutak. Width of open water along coast averages 2 miles. Pack is brash and growlers with occasional berg.
June 11	USS *Hoist*	Entrance Skovfjord closed		Close-pack ice with storis and bergs extends 34 miles seaward.
Do	USS *Hoist*	59 18	47 16	2 bergs.
		Close pack begins bearing 200° 34 miles from Simiutak.		Storis and bergs.
Do	USS *Hoist*			Open pack ice with growlers and heavy floes extends 33 miles seaward from Storo and 40 miles from Nunarsuit. Growlers and bergs from Storo through southern channel Arsuk Fjord. Fjord clear Inugsuk to Grondal.
June 14	USCGC *Sorrel*	7 miles SW. of Nanortalik.		Close winter ice. Small floe tight packed. Ice extends to beach.
June 20	USS *Peconic*	Belle Isle Strait		Full of floating field ice.
July 9	USCGC *Evergreen*	59 31	44 06	Storis extending 15½ miles seaward 183° T. from Cape Farewell.
July 10	USS *Tanner*	52 57	55 24	Berg.
Do	USS *Tanner*	53 15	55 10	Do.
Do	USS *Tanner*	52 57	55 22	Do.
Do	USS *Tanner*	53 19	55 20	Do.
Do	USS *Tanner*	53 15	55 18	Do.
Do	USS *Tanner*	53 35	55 17	Do.
Do	USS *Tanner*	53 32	55 33	Do.
Do	USS *Tanner*	53 34	55 40	Do.
Do	USS *Tanner*	53 31	55 40	Do.
Do	USS *Tanner*	53 41	55 51	Do.
Do	USS *Tanner*	54 03	56 04	Do.
Do	USS *Tanner*	54 03	55 36	Do.
Do	USS *Tanner*	53 52	55 56	Do.
Do	USS *Uskport*	52 08	54 21	Do.
July 12	USCGC *Evergreen (IP)*	62 20	63 55	Pack ice extending 7 miles seaward from shore.
Do	USNT *Tonti*	50 05	52 36	3 bergs.
Do	USS *Tanner*	54 05	56 00	Berg.
Do	USS *Tanner*	54 10	56 02	Do.
Do	USS *Tanner*	54 14	56 15	Do.
Do	USS *Tanner*	54 09	56 27	Do.
Do	USS *Tanner*	54 05	56 28	Do.
Do	USS *Tanner*	54 20	57 39	Do.
Do	USS *Tanner*	54 15	57 33	Do.

Table of Ice and Obstruction Reports, North of 50° N., 1949—Continued

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
July 12	USS *Tanner*	54 15	57 37	Berg.
July 17-19	USCGC *Evergreen (IP)*	66 48 to 66 51 to 67 42 to 68 03	58 44 to 58 00 to 57 46 to 56 26	Eastern limits of west ice observed.
Do	USCGC *Evergreen (IP)*	68 56 to 70 06	60 06 to 58 36	Do.
July 19	USAT *Pvt. Joe P. Martinez*	50 07	52 50	Berg.
Do	LNAT	52 10	54 19	Growler.
July 31	*Alcyone Fortune*	51 14	55 00	Berg.
Aug. 6	USS *Pecatonica*	53 30	55 37	2 bergs.
Aug. 7	USCGC *Winnebago*	60 43	49 17	Storis ice pack. Entrance to Arsuk Fjord clear except for scattered bergs. Ice pack 15 to 20 miles off Greenland Coast.
Aug. 8	USCGC *Winnebago*	62 25	50 40	Pack ice. Numerous bergs and growlers.
Aug. 9	USCGC *Winnebago*	68 28	60 10	West ice extending northward and eastward.
Aug.10	USCGC *Winnebago*	70 28	59 44	Heavy pack ice.
Do	USCGC *Winnebago*	71 43	61 38	Heavy pack ice. Ice extending about 20 miles in a northeasterly direction.
Aug. 19	USCGC *Humbolt*	51 50	51 06	Berg and 2 growlers.
Aug. 27	*Seaboard Star*	58 21 to 58 21	42 55 to 42 57	6 growlers.
Do	*Seaboard Star*	58 23	43 10	Small berg.
Sept. 8	*Seaboard Ranger*	57 28	43 34	Berg.
Sept. 17	*Dundalk*	51 42	56 12	Large berg.
Sept. 19	Canflaglant	62 50	73 33	Do.
Oct. 22	USCGC *Mendota*	57 15	40 36	Berg.
Do	USCGC *Mendota*	56 20	41 35	Do.
Do	USCGC *Mendota*	55 46	41 55	Do.
Do	USCGC *Mendota*	55 37	42 33	Do.
Do	USCGC *Mendota*	58 00	39 00	Do.
Oct. 24	*Makefjell*	57 32	42 51	Large berg.
Do	*Makefjell*	57 27	43 08	Small berg.
Oct. 25	*Frierfjord*	57 16	42 00	Large berg.
Nov. 9	*Topdalsfjord*	57 08	41 58	Large berg, several growlers.
Nov. 11	CTF 28	61 21.5	53 41	Bergy bit.
Nov. 12	CTF 28	64 28	56 14	Berg.
Nov. 16	*Empress of Canada*	50 51	41 00	Do.
Dec. 22	*Godafoss*	57 40	39 08	2 bergs.
Dec. 23	USCGC *Cook Inlet*	57 24.5	40 39	Do.
Do	USCGC *Cook Inlet*	57 46	40 13	2 small bergs.
Do	USCGC *Cook Inlet*	57 53	40 03	2 radar targets, possible bergs.

WEATHER

In the past ice-patrol cutters have maintained a comprehensive program for weather observations. However, this year no patrol cutters were used, so that no such program was possible. The oceanographic vessel, USCGC *Evergreen*, made six-hourly surface reports during the whole season. This year ocean weather station D at 45°00′ N., 43°00′ W., was continuously occupied. As long as the station continues to be occupied, future weather programs of the International Ice Patrol will probably be limited to six-hourly surface weather observations by the surface patrol vessels and the oceanographic vessel.

In Bulletin 33 of this series an analysis of meteorological conditions prior to and during the 1947 season was made to find out what effect abnormal barometric pressure distributions had on sea ice and icebergs. A similar analysis was attempted for 1949. In one respect, the 1949 season was similar to the 1947 season. The prediction by use of the Smith formulae was for a slightly heavier than normal ice year in 1949, which was true of the 1947 season. Data for months previous to March 1949 were not obtainable, but daily synoptic charts prepared by the aerological office of the Naval Air Station at Argentia for 0630 G.C.T. were obtained for March through 15 June. On each chart an area of rectangular shape 600 miles by 180 miles was drawn stretching along the Labrador-Newfoundland coast with its inshore long side running from 55° N., 57° W., to 46° N., 50° W. The barometric pressure gradients along each pair of sides were averaged for each available chart to get the gradient components which might be considered to apply to the area centered at about 51° N., 51° W. Each component of the gradient (normal and parallel to the coast) was averaged for the month and the monthly averages resolved to get a resultant average gradient for each month from March through 15 June. The long dimension of the rectangle is oriented at about 335½° and 155½° true. As the wind runs across the isobars at an angle of about 30° to the left at the surface in this region and as the drift of floating sea ice (as a direct effect of the wind) is to the right of the wind by a variable amount approximating 45°, the ice drift has been taken as being directed 15° to the right of the geostrophic wind, the approximate

Month	Direction of wind drift	Gradient	Wind
	Degree		
March 1949	049	0.0106	8.0
April 1949	218	.0055	4.2
May 1949	120	.0089	6.7
1–15 June 1949	142	.0125	9.5

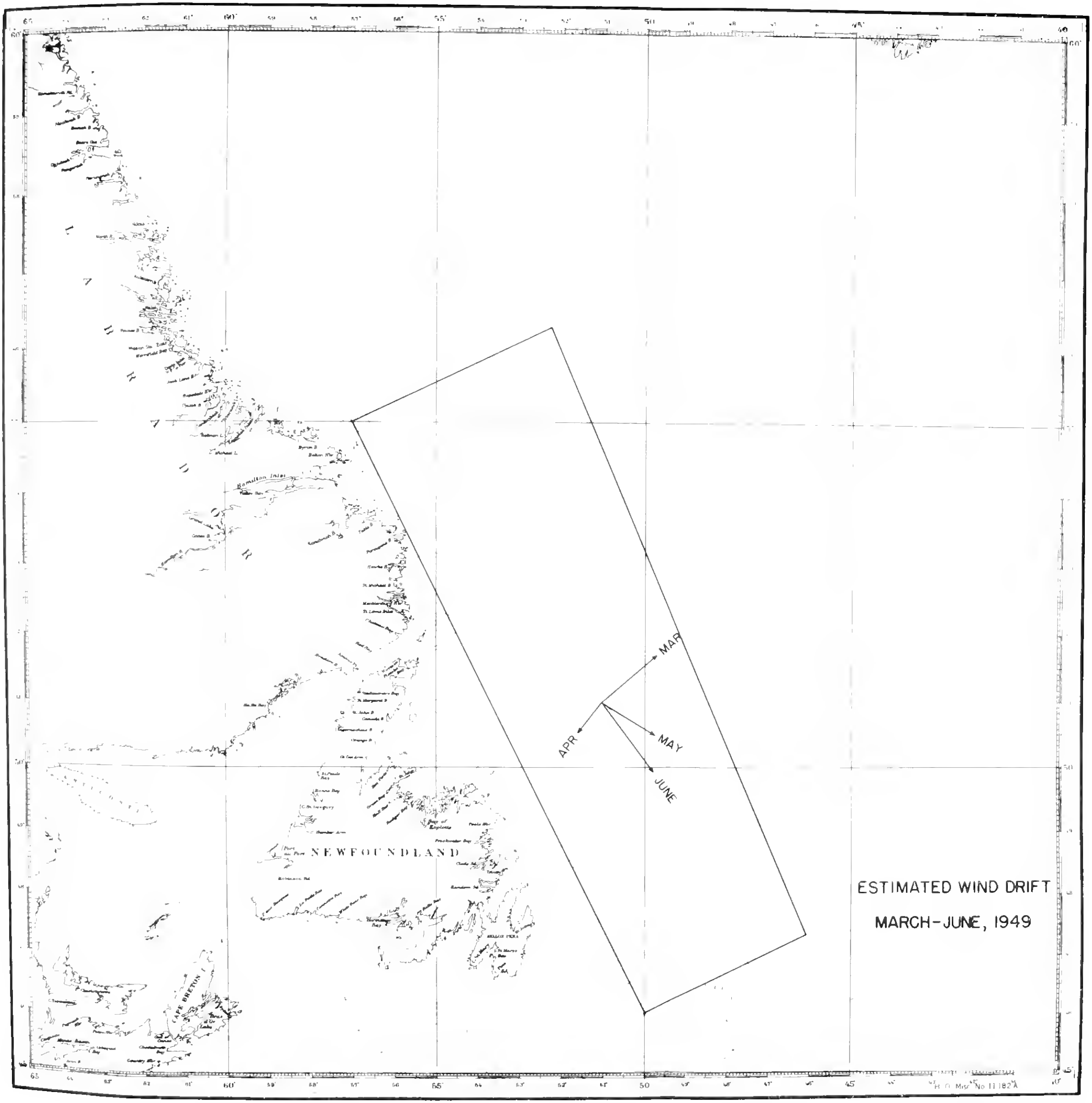

FIGURE 6.—Estimated wind drift of ice from monthly mean barometric pressure gradients in area indicated. March–June 1949.

value of which, expressed in knots, has been listed in the following table along with the average gradients of barometric pressures in millibars per nautical mile and the resultant of direction of the wind drift in degrees true estimated as described above.

From this table it can be seen that in March the wind drift was offshore into warm waters and that in April it changed almost 180° to onshore. Figure 6 illustrates this table graphically. Thus, for two successive months the wind drift was such that it contributed markedly to the destruction of ice. The offshore wind in March drove sea ice, and to a lesser degree bergs, offshore into warm water where a large amount of ice supposedly melted. In April the effect of the wind was to drive most of the remaining bergs onshore where they were so eroded that they were not large enough to make the long journey to the Grand Banks during the months of May and June.

A more comprehensive discussion of the effects of wind drift at this time is precluded because synoptic charts for the months prior to March 1949 were not available.

ICE CENSUS 1949

Between 10 August 1949, and 18 August 1949, two PB1G (flying fortresses), with the USCGC *Winnebago* acting as a weather reporting station, and a plane guard carried out an ice census of the Baffin Bay region. This was the second aerial ice census of Baffin Bay undertaken by the U. S. Coast Guard in furtherance of the long-range scientific program of the International Ice Patrol. Difficulties encountered during the 1948 ice census, especially the problems involved in a photographic analysis of the ice census, were eliminated.

Heretofore visual counts of the icebergs in this area had been made in 1940 and 1948. In 1940 the count had been made from a Coast Guard cutter circumnavigating Baffin Bay and in 1948 by two PB1G airplanes. The total count in 1940 was a combination of visual sightings and estimates by experienced observers. The count in 1948 was based on visual sightings with less emphasis on estimates by trained observers. In 1949 the count was based on visual sightings, radar counts (approximately one-sixth of the census area was searched by radar alone because of poor visibility), and photographs of large concentrations. This latter count, while subject to certain limitations of the equipment involved, was by far the most accurate that has been obtained. A total of 40,232 icebergs were counted in 1949 as compared to 12,128 in 1948 and 3,289 in 1940. A visual count made in 1949 before the photographs were developed indicated 17,500 bergs in Baffin Bay. If nothing else, these different counts proved that photographs were necessary if an accurate ice census was to be obtained.

There were several reasons why the photographs were such an invaluable aid. Usually the planes flew at 150 knots, which is the equivalent of 2.5 miles per minute. Thus the plane would cross an ice-choked fjord in less than a minute and in that time it was up to the observer to estimate the number of icebergs in that fjord. By using photographs, it was possible to count the number of icebergs in greater detail. From the experience of the 1949 census, it was concluded that it was impossible for the human eye to estimate the quantity of icebergs in any large concentrations such as those found in West Greenland fjords when traveling at high speeds. All four of the cameras were equipped with filters to enable photographs to be taken through light haze. Since haze was always present in varying degrees on all the flights, it was felt that the use of filters enabled many icebergs to be photographed that were not seen by the observers.

Photography had been employed on the 1948 census, but the results were not satisfactory. The lessons learned were incorporated in the photographic plan for the 1949 census. The equipment used for the 1949 census consisted of two F–56 cameras with 8¼-inch focal length in each airplane with standard F–56 roll-film magazines carrying 125-foot rolls of Super XX aerial film. All exposures were at 1/150 second or better, with the greatest number being made in coastal areas. Intervals were computed to allow for approximately 25 percent overlap at the bottom of the negative. A total of 1,823 shots were made, which included blanks for identification and scenic shots as well as ice census shots. None of these pictures were developed before the return of the planes to the United States, so it was impossible to check photographic procedures while the ice census was being conducted. In spite of this drawback, not a single exposure was lost.

In 1948 the mounting of the cameras was a serious problem. This problem was eliminated in 1949 by constructing lightweight all-metal frames to hold the cameras in place, which would enable the cameras to be held at any desired elevation and azimuth. Identification of photographs in Greenland waters, the great problem of the 1948 census, was reduced to negligible proportions in 1949. A rigid procedure coordinating the actions of the photographer with the navigator's work was developed. The efficacy of this procedure was fully proven in the postcensus analysis of the pictures. The conclusion from this latter census was that although there were more elaborate cameras and associated gear for use in aerial mapping, the simplified gear developed for the 1949 census combined a maximum of utility with a minimum of expense.

Final analysis of the pictures was accomplished by drawing transparent overlays to the same size as the finished picture upon which were ruled horizontal and vertical lines to represent areas 1 mile square on the photograph. Camera depression angles were so com-

puted that the top of the photograph represented a distance 15 miles from the plane's track, while the bottom of the picture represented a distance of about 1 to 2 miles from the plane's track, depending on the height at which the picture was taken, usually at 6,000 or 10,000 feet. Thus it was possible to count the icebergs in each square mile and, further, to match consecutive photographs with each other so that there would not be any duplication.

There were nine flights made between 10 August 1949 and 18 August 1949. A tabulation of the flights is as follows (letter designations refer to the letters on figure 7):

Number	Date	Letter	Duration
	1949		*Hours*
1	10 August	A 1	6.0
2	do	F	8.3
3	11 August	G	7.8
4	12 August	A 2	6.9
5	do	C 1	8.3
6	14 August	D	9.7
7	do	E	9.9
8	18 August	B	8.4
9	do	C 2	7.5
Total			72.8

A chart of the Baffin Bay area is shown in figure 8 which indicates the distribution of the icebergs for the 1949 census. Figures 9, 10, and 11 illustrate the distribution in greater detail. Baffin Bay was divided into three areas, A, B, and C, whose boundaries were chosen after a study of current conditions in this area. In area A there were 33,962 icebergs, in area B, 4,933 and in area C, 1,337. These figures are not directly comparable to those of the 1948 census because of the improved methods used to obtain them. However, there are indications that the attrition rate for bergs traveling from the glacier fronts in West Greenland around Baffin Bay in a counterclockwise direction enroute to the Grand Banks may be greater than 90 percent. The results of a census in 1950 executed in the same manner as the 1949 census should enable a quantitative analysis to be made which will add to the growing knowledge of the factors affecting the drift of icebergs into the Grand Banks region.

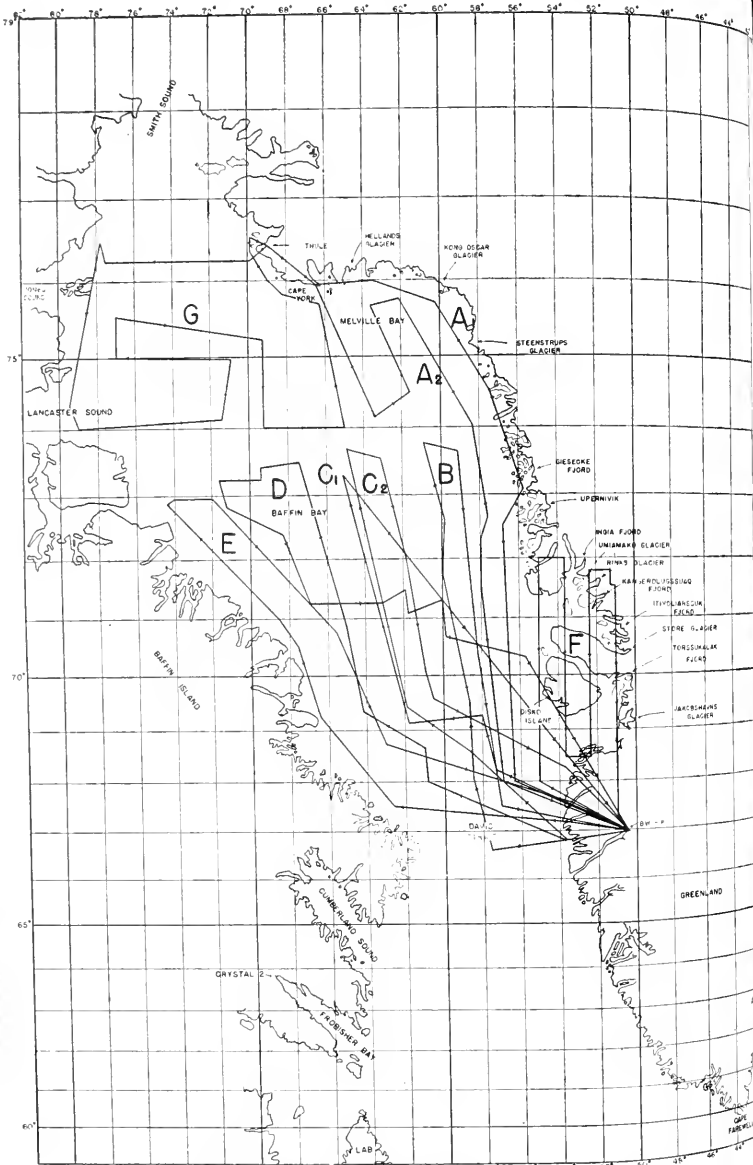

FIGURE 7.—Track chart showing flights made during 1949 iceberg census of Baffin Bay.

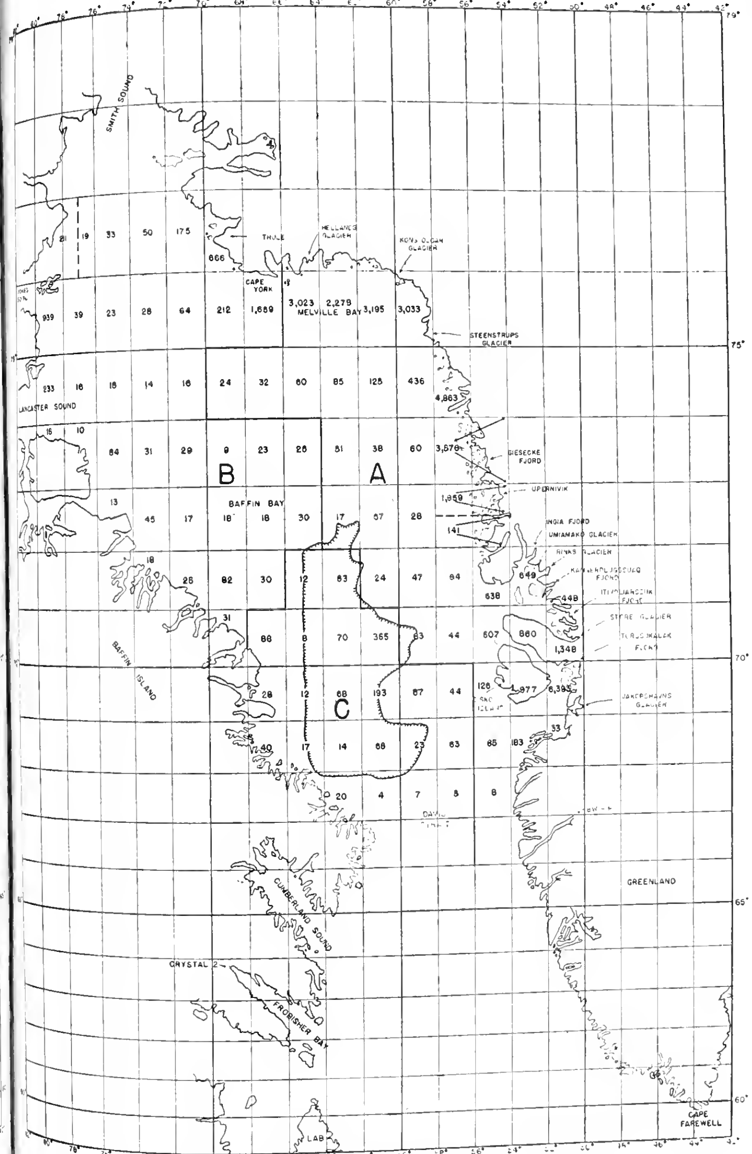

FIGURE 8.—Distribution of icebergs in West Greenland fjords, Baffin Bay and Davis Strait 10–18 August 1949.

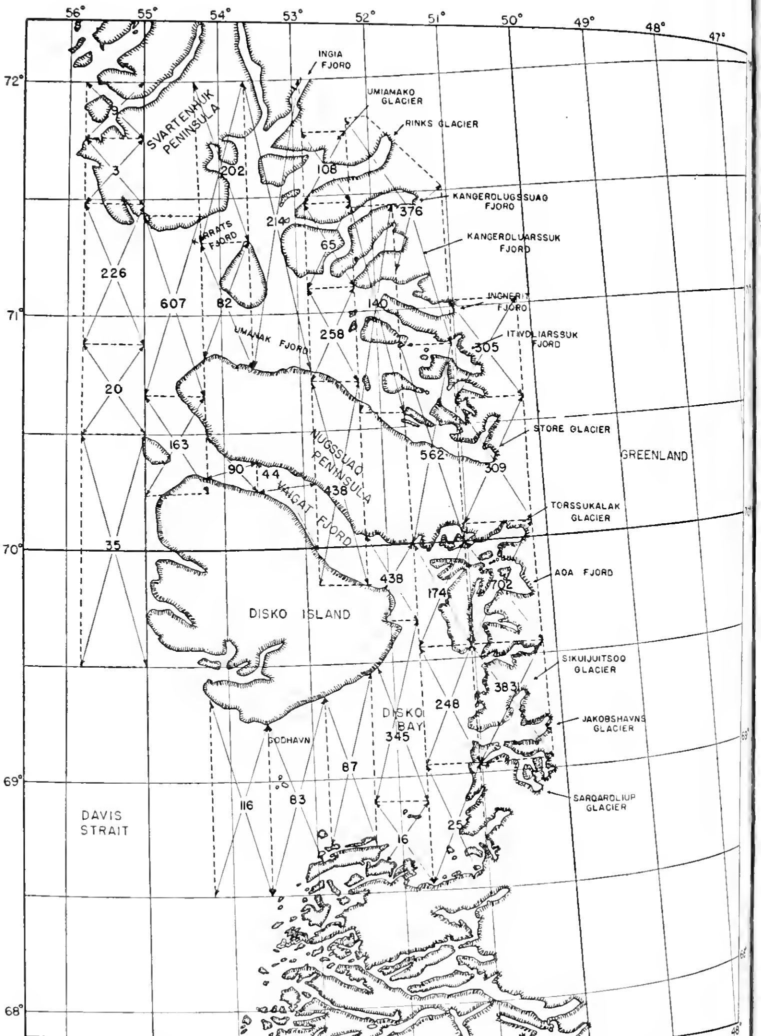

FIGURE 9.—Distribution of icebergs in West Greenland fjords from 68° N., to Ingia Fjord 10–18 August 1949.

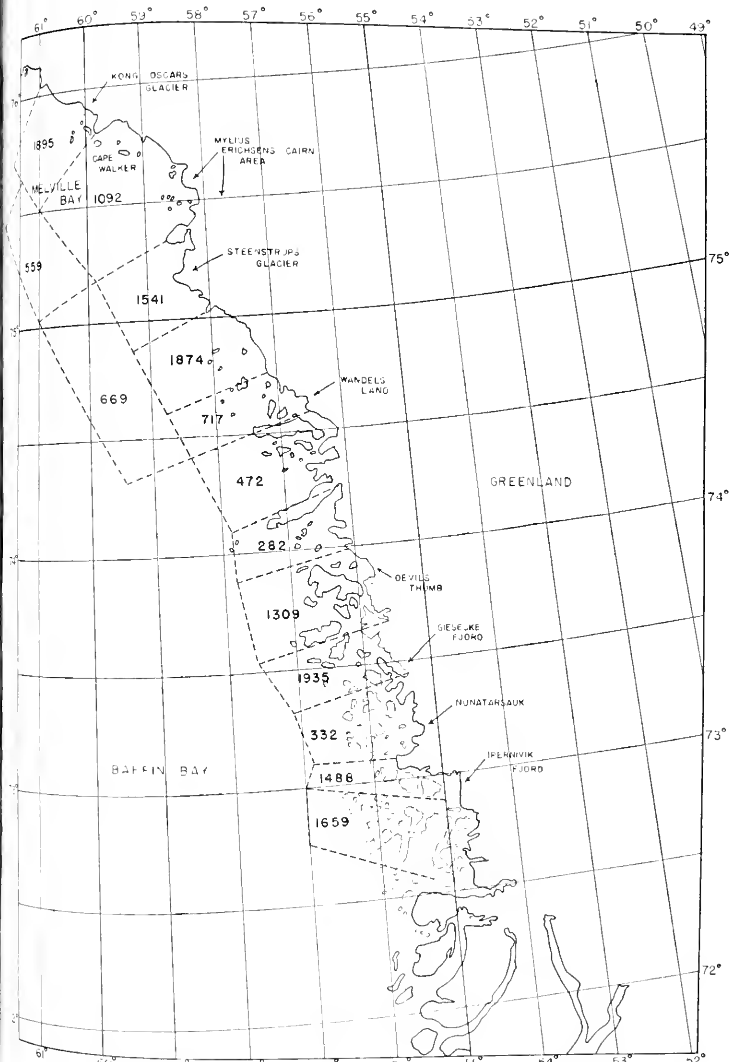

FIGURE 10.—Distribution of icebergs in West Greenland fjords from Ingia Fjord to Kong Oscar's glacier 10–18 August 1949.

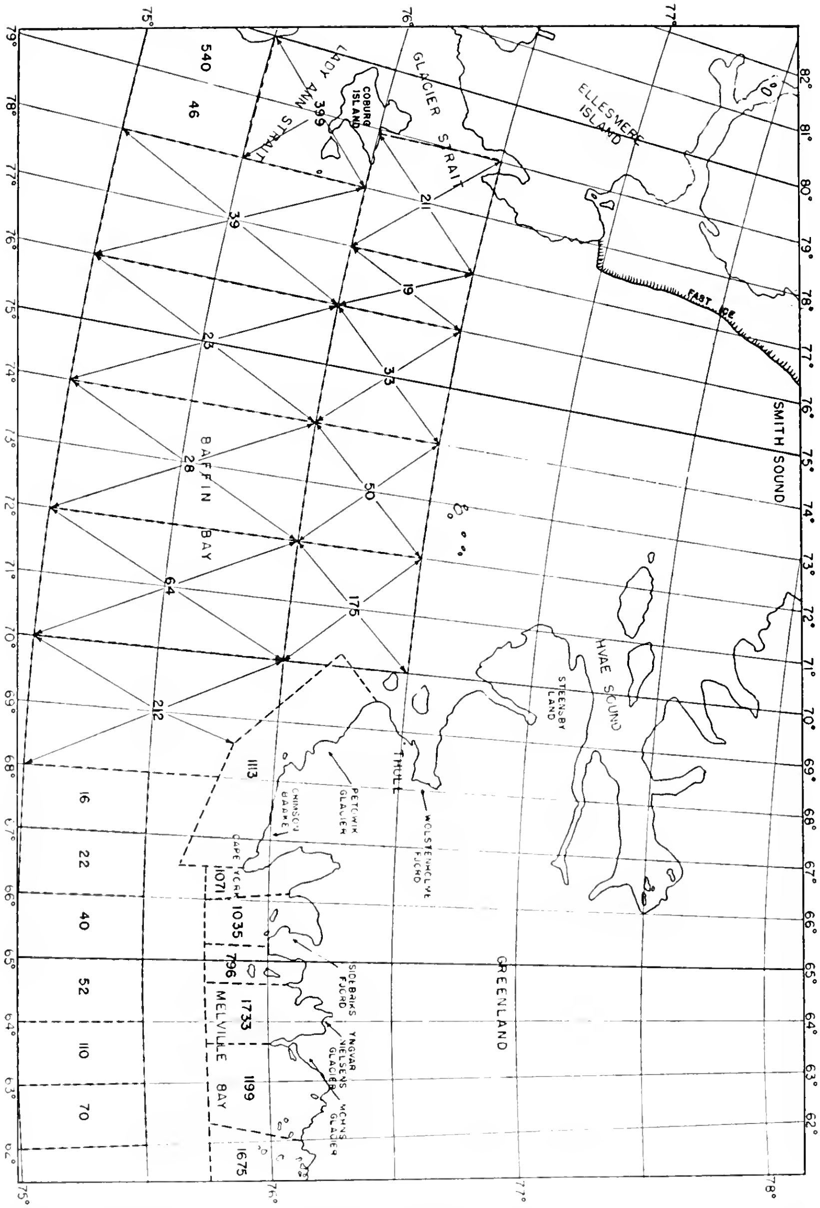

FIGURE 11.—Distribution of icebergs in West Greenland fjords and eastern Baffin Bay from Melville Bay to Lady Ann Strait 10–18 August 1949.

PHYSICAL OCEANOGRAPHY OF THE GRAND BANKS REGION, THE LABRADOR SEA AND DAVIS STRAIT IN 1949

BY FLOYD M. SOULE[1]

During 1949 the 180-foot tender-class cutter *Evergreen* was again used as the oceanographic vessel of the ice patrol. The problems of operation from this vessel remained essentially the same as those described in Bulletin No. 34 of this series. Hull vibration continued

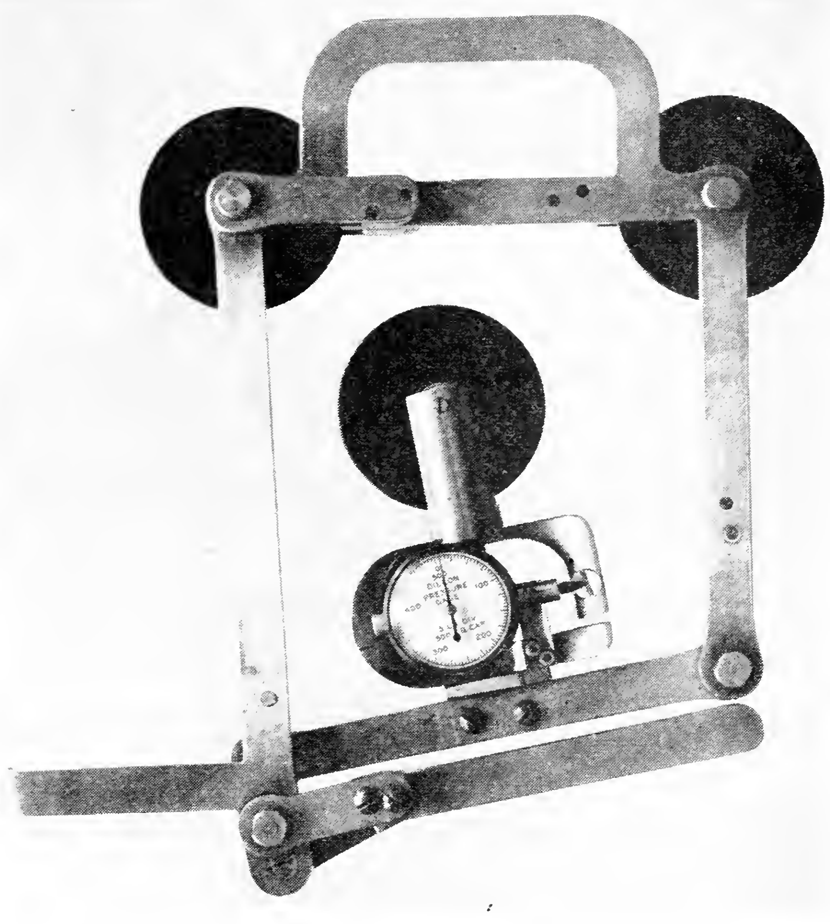

FIGURE 12.—Hand dynamometer designed to measure tension up to 2,500 pounds in wire rope of 5/32 inch diameter.

to be an important factor through its effect on the accuracy of temperature measurements and the deterioration of reversing thermometers, although trouble of the latter category was somewhat re-

[1] Contribution No. 550 of the Woods Hole Oceanographic Institution.

duced through foam-rubber cushioning of the thermometers during periods of storage. The unfavorable laboratory conditions of vibration, noise, and excessive temperature were basically the same, although salinity measurements were improved by the countermeasures of building a filtered audio amplifier for the salinity bridge detector circuit and introducing an additional ventilator duct near the salinity bridge. New oceanographic winches employing electric drive and hydraulic transmission were installed just prior to the beginning of the season and eliminated many of the electrical and mechanical troubles experienced previously and permitted more rapid occupation of stations.

As very little information is available in the literature regarding the relationship between wire tension with the wire at rest and with the gear being hauled in, some measurements were made to determine what standard operating procedures to follow. A hand dynamometer was built so that it could be applied to the wire to measure the wire tension whether the wire was at rest or in motion. It was designed for 5/32-inch diameter wire rope with full scale deflection at a wire tension of 2,500 pounds, which is the breaking strength of the wire when new. The dynamometer is shown in figure 12. From measurements with the wire at rest and being hauled in at different speeds and with different lengths of wire out it was concluded that for practical purposes the relationship between tension at rest and tension hauling in is linear under the conditions existing on the *Evergreen* and over the range of wire speeds measured (from 74 to 193 meters/minute) and may be expressed as

$$T = [1.55 + 0.0042(S-100)]\ t$$

where T is the tension with a wire speed of S meters per minute and t is the tension with the wire at rest. Considering the protection of the wire against excessive tension, protecting the winch against excessive loads and protection against two-blocking gear from inability to stop in time after the incoming gear is sighted, recommended standard operating procedure with limiting wire speeds is shown in figure 13. This does not represent the operating procedure followed in 1949, since its compilation depended upon measurements made with at least 3,000 meters of wire out and opportunity for these measurements did not arise until the postseason cruise.

At 0600 on 4 April, the *Evergreen* departed Argentia to make a current survey of the area over and immediately seaward of the southwestern, southern, and eastern slopes of the Grand Banks. It had been planned to begin the survey on the southwestern slope and work around the Tail of the Banks and northward along the eastern slope to about latitude 46° N., including in the area as great a length along the margin of the Grand Banks as time permitted. While such

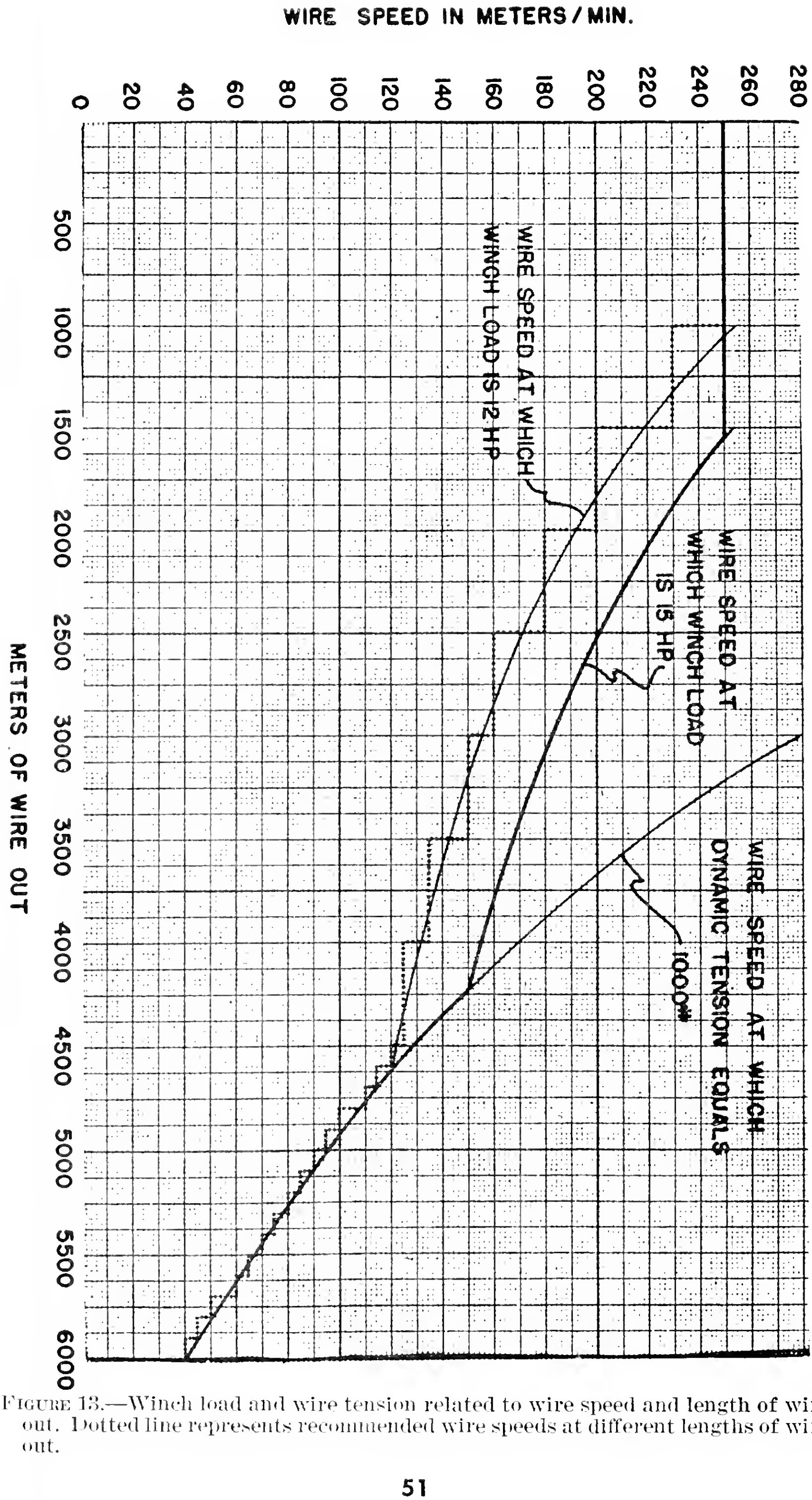

FIGURE 13.—Winch load and wire tension related to wire speed and length of wire out. Dotted line represents recommended wire speeds at different lengths of wire out.

an area might not extend far enough seaward to include all areas of mixed-water eddies, it would define the western limits to which bergs might be expected to drift, and locate the major eddies and areas where ice might be expected to threaten traffic on the North Atlantic Track Agreement tracks, and indicate areas for more extensive subsequent surveys. The work of collection of data began at station 3747 located at 43°34′ N., 51°30′ W., at 1745 on 5 April. At 0355 on 6 April, it was necessary to heave-to to await better weather. At 2257 on 6 April, station work was resumed at station 3751. However, a fathometer failure which had occurred during the heavy weather was found to be beyond possible repair at sea, and upon completion of station 3753 at 1300 on 7 April, the *Evergreen* laid a course for Argentia to accomplish the necessary repairs, arriving there at 1336 on 8 April.

Advantage was taken of this inport time to replenish exhausted supplies of high-pressure nitrogen for the winches, to stop major leaks in the gas and hydraulic systems of the winches and to clean and adjust their valves to prevent their unloading at wire tensions below about 1,000 pounds. With this done, departure was taken from Argentia at 1130 on 12 April to continue the current survey interrupted by the fathometer failure on the first cruise. Work of collection of data began on 13 April at station 3754, located at 42°02.5′ N., 52°04′ W., and progressed northward without major interruptions, speeding up as inexperienced personnel gained facility in the performance of their various tasks. Gear was shifted to the port side and that winch used during the occupation of stations 3766 to 3773, while a rough valve (replenishing and servo-pump relief valve) in the starboard winch was polished. It was learned from experience that because of the rolling of the ship, hydraulic oil sump levels had to be maintained at higher than indicated normal levels to prevent air getting into the hydraulic system. One 900-foot bathythermograph and one 450-foot bathythermograph were lost through breaking of the wire under circumstances which indicate the wire had been defective. Two reversing thermometers were broken and two messengers were lost overboard during heavy weather. Several miscellaneous Nansen water bottle parts failed. However, few if any essential data were lost and the survey, comprising 57 stations, was completed at station 3810 located at 46°17.5′ N., 49°00′ W., on the afternoon of 23 April and a course laid for Argentia, with arrival there at 1740 on 24 April.

A third cruise was undertaken with departure from Argentia at 0611 on 6 May. Previous cruises had indicated little need for extending subsequent surveys westward of the Tail of the Grand Banks. This survey was therefore intended to cover the area from Flemish Cap to the Tail of the Banks and the work of collection of data began

at station 3811 located at 46°47.5′ N., 44°40′ W., at 2040 on 7 May. Work progressed from north toward south without serious interruption and the 62-station survey was completed at station 3872, located at 42°41′ N., 49°10′ W., at 1630 on 17 May. The *Evergreen* then laid a course for Argentia, with arrival there at 1201 on 19 May. During this cruise the deepest bottle at station 3819 dragged on bottom, where the thermometer frame and the two attached reversing thermometers were lost. A third thermometer was put out of action through the breakage of its glass-protecting sheath during attempts to restore the mercury to its proper position when gas in the thermometer separated the mercury column.

To begin a fourth cruise, the *Evergreen* departed Argentia at 0948 on 2 June. This cruise was intended to develop information regarding current conditions in the area immediately northward of the Grand Banks where the Labrador Current divides into the two branches which follow the Avalon Peninsula and the eastern slope of the Grand Banks. Stations were occupied along three sections disposed in the shape of a triangle defined by the corners at approximately 47°24′ N., 50°00′ W., 50°00′ N., 49°00′ W., and 48°44′ N., 52°58′ W. (off Cape Bonavista). The work of collection of data began at station 3873, located at 47°24′ N., 50°00′ W., on the morning of 3 June and progressed without major incident to its completion on the evening of 6 June at station 3902, located near the point of beginning. In accordance with dispatch instructions from Commander, International Ice Patrol, upon completion of the oceanographic survey the *Evergreen* proceeded to relocate and drift with a berg sighted by plane on 2 June at 49°24′ N., 51°48′ W., and on 5 June at 48°55′ N., 51°25′ W. The berg was reached on the afternoon of 7 June and departure was taken from the berg on the afternoon of 8 June for Argentia, with arrival there at 2042 on 9 June.

As the ice-patrol season was terminated on 15 June, the next cruise of the *Evergreen* was considered to be the postseason cruise, part one. The *Evergreen* departed Argentia at 1028 on 16 June to repeat the triangular survey of the fourth cruise to learn something of the stability of the circulation pattern in the vicinity of the branch point of the Labrador Current included in the triangle. The work of collection of data began on the morning of 17 June at station 3903 at the southern corner of the triangle and progressed without major incident around the triangle in a counterclockwise direction, the final station, number 3932, being completed on the afternoon of 20 June near the point of beginning. The *Evergreen* then laid a course for Argentia, with arrival there at 1658 on 21 June.

At 2102 on 2 July, the *Evergreen* departed Argentia on the second and final part of the postseason cruise. It had been planned to occupy a section across the Labrador Sea from South Wolf Island, Labrador,

to Cape Farewell, Greenland; a second longitudinal section from the deep water of the Labrador Sea across the ridge at Davis Strait to the deep water of Baffin Bay; a third section across the Labrador Current from the deep water of the Labrador Sea to Loks Land; a fourth section across the West Greenland Current from the deep water of the Labrador Sea across Fyllas Bank to the vicinity of Godthaab, Greenland; a fifth section across the Baffin Land Current from the deep water of Baffin Bay to Cape Kater, Baffin Island; and a sixth section across the West Greenland Current from the deep water of Baffin Bay to the Nugssuak Peninsula just north of the northern end of the Vaigat.

The work of collection of data began off South Wolf Island at station 3933 on the morning of 5 July and progressed toward Cape Farewell until the afternoon of 9 July, when storis blocked further progress and station 3954 was occupied at the edge of the ice 15½ miles off the beach. From this station the *Evergreen* proceeded to 62°14′ N., 56°06′ W., where station 3955 was occupied on the morning of 11 July to begin the Loks Land section. This section was completed at station 3965 on the evening of 12 July, 15½ miles off the beach at the outer edge of the West Ice. The *Evergreen* then returned to the longitudinal section where, on the evening of the 13th, at 62°30′ N., 56°14′ W., station 3966 was occupied to begin the Fyllas Bank section. This section was completed with station 3974, located at 63°59′ N., 52°42′ W., on the morning of 15 July, after which a return to the longitudinal section was made again and work on it resumed on the evening of the 15th at station 3975, located at 63°00′ N., 56°32′ W. From here, work on the longitudinal section progressed northward according to plan until the afternoon of 17 July, when the edge of the West Ice was encountered at station 3984, located at 66°48.5′ N., 58°40′ W. From here northward it was necessary to deviate eastward from the planned course of the longitudinal section as the outer edge of the West Ice was followed. The ice covered the deeper parts of the southern end of Baffin Bay and extended eastward almost to the edge of Great Hellefiske Bank. Near the northern end of this bank it again was possible to work somewhat to the westward, but at only one station, number 3990, was it sufficiently westerly to attain a depth of 1,500 meters. This station was located at 69°06.5′ N., 59°56′ W. From here the edge of the ice again trended east of north and at station 3992, located at 69°51.5′ N., 59°01′ W., the longitudinal section was terminated on the evening of 19 July and the Nugssuak Peninsula section begun since the West Ice precluded any work on the Cape Kater section. The Nugssuak Peninsula section was completed at station 3999, located at 70°38.5′ N., 55°01′ W., in the early afternoon of 20 July, and a course laid for Argentia, with arrival at that port at 1828 on 26 July. After replenishing, departure

was taken on the 27th for Woods Hole, with arrival there on the evening of 30 July to discharge oceanographic equipment.

At the 186 stations occupied during the surveys in the Grand Banks area and the triangles just north of the Grand Banks, the observations extended to a depth of about 1,500 meters where the depth of water permitted and the dynamic topography was referred to the 1,000-decibar surface. At the remaining 67 stations occupied during part two of the postseason cruise, the observations extended from the surface to as near bottom as was practicable and the dynamic topography was referred to the 1,500-decibar surface. The intended depths of observation, in meters, were 0, 25, 50, 75, 100, 150, 200, 300, 400, 600, 800, 1,000, and thence by 500-meter intervals. Protected deep-sea reversing thermometers, most of them manufactured by Richter & Wiese, and a few by Negretti & Zambra, and by the G & M Manufacturing Co., were used to measure the temperatures. Depths of observation were based on measurements made with Richter & Wiese unprotected deep-sea reversing thermometers. Intercomparisons were made amongst the thermometers by making periodic shifts in thermometer pairs. Thus most of the thermometers used were each compared with several other thermometers. These intercomparisons helped identify unreliable thermometers. A total of 1,661 individual intercomparisons were made, giving a probable difference between corrected readings of a pair of thermometers of $\pm 0.010°$ C. As most of the observed temperatures are the means of the corrected readings of a pair of thermometers, it is considered that they are accurate to about $\pm 0.01°$.

As in previous years, water samples were collected with Nansen-type reversing water bottles, transferred to rubber-gasketed citrate of magnesia bottles, and salinities determined within 24 hours of collection by means of a Wenner salinity bridge. As the bridge was calibrated by using samples whose salinities were determined by silver-nitrate titration, the accuracy of the salinity measurements is limited to that of the silver-nitrate titration method or about ± 0.02 ‰ in salinity. However, the precision of the salinities is better than that and of the order of about ± 0.005 ‰. For the most part they have been tabulated to the nearest 0.01 ‰. During routine salinity runs, the bridge was standardized each tenth to thirteenth sample in each of the cells with substandard sea water from an oil-sealed carboy. At least once during each run and usually oftener, Copenhagen standard sea water was measured as an unknown to permit final adjustments of salinities for each survey. These salinity adjustments were as follows:

First and second cruises	+0.01 ‰
Third cruise	No correction
Fourth cruise	+0.01 ‰
Post season cruise, parts 1 and 2	No correction

The tables show the corrected values of salinity, but since the dynamic heights had already been computed and the topography delineated, the tabulated values of σ_t have not been recomputed but are the originally computed values to which a flat correction of 0.01 has been applied where a correction of 0.01 °/₀₀ salinity was necessary. Similarly, the tabulated dynamic heights in these instances have been adjusted by a constant correction of 8 mm. The dynamic topographic charts showing the results of the first and second cruises and the first triangle have not been corrected and show topography which is about 8 mm too high.

The oceanographic work was under the supervision of Oceanographer Floyd M. Soule, who was assisted by LT. Harry H. Carter. Other assistants in the observational work were William B. Arndt, aerographer's mate third class; Raymond W. Wood, boatswain's mate second class; Francis N. Brown, yeoman third class, and Lydle L. Rickard, boatswain's mate third class.

The seven oceanographic stations occupied during the first cruise are shown in figure 14. Inasmuch as they are disposed in the form of a single section, current patterns cannot be derived from them with accuracy, but the dynamic heights considered with respect to other indicators permit an inference as to the general features of circulation within a limited area bordering the section as shown in figure 14. A von Arx geomagnetic electrokinetograph was in operation along the section and its indications have been taken into account in the preparation of the figure. No negative temperatures were observed, even near the edge of the Grand Banks, the lowest temperature recorded being 1.50° C at a depth of 129 meters at station 3749. The effects of the Gulf Stream system were in evidence at station 3753, where water of more than 11° C and correspondingly high salinity was present just below the surface. The currents in this area were weak and indicated little opportunity for bergs to drift as far west as this section. It was concluded, therefore, that subsequent surveys of the 1949 season need not extend as far westward as this.

The dynamic topography found during the second cruise is shown in figure 15. As in the first cruise, the indications of the von Arx current meter have been considered in drawing the dynamic isobaths. The figure shows the Labrador Current flowing southward along the eastern slope of the Grand Banks. Southward of the Tail of the Banks the western limit of about 50°25′ W. was attained at about 42°30′ N. Although the velocity of the Labrador Current was not great, the offshore limit of the southward moving water was well outside the 1,000-fathom curve and the southern limit of the cold mixed water was south of the area surveyed. Thus any bergs entering the northern part of the area in the Labrador Current and not

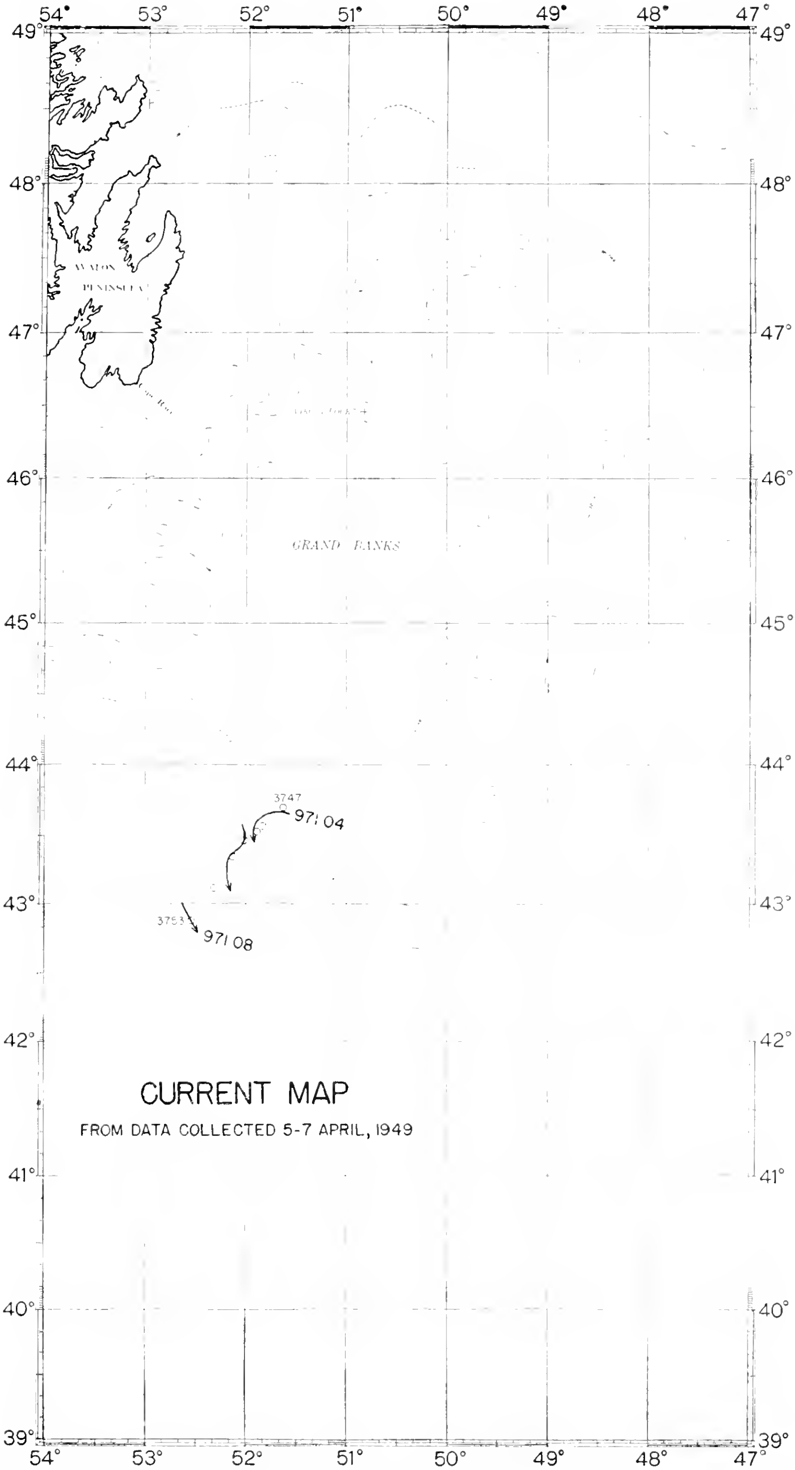

FIGURE 14.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 5–7 April, 1949. Oceanographic station positions are indicated and the station numbers given at turning points.

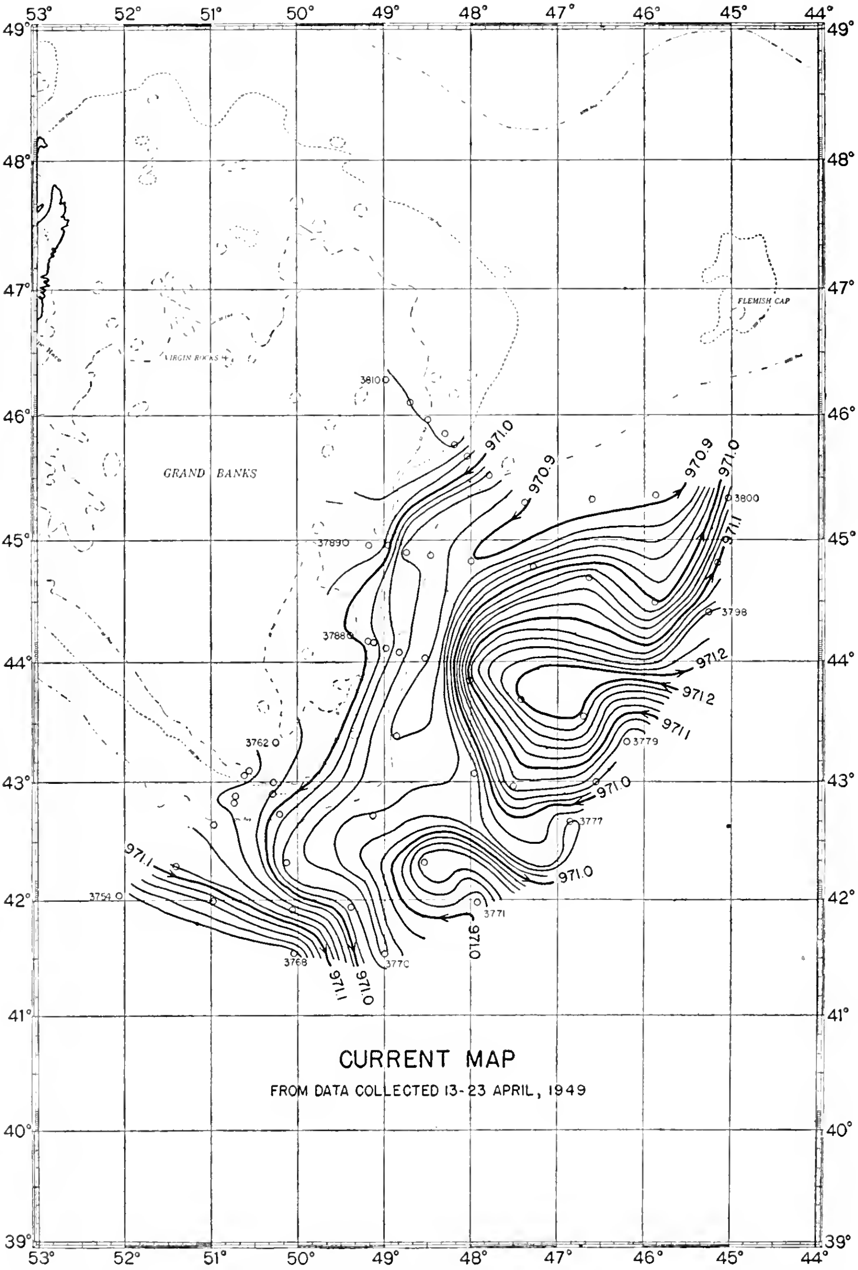

FIGURE 15.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 13–23 April, 1949. Oceanographic station positions are indicated and the station numbers given at turning points.

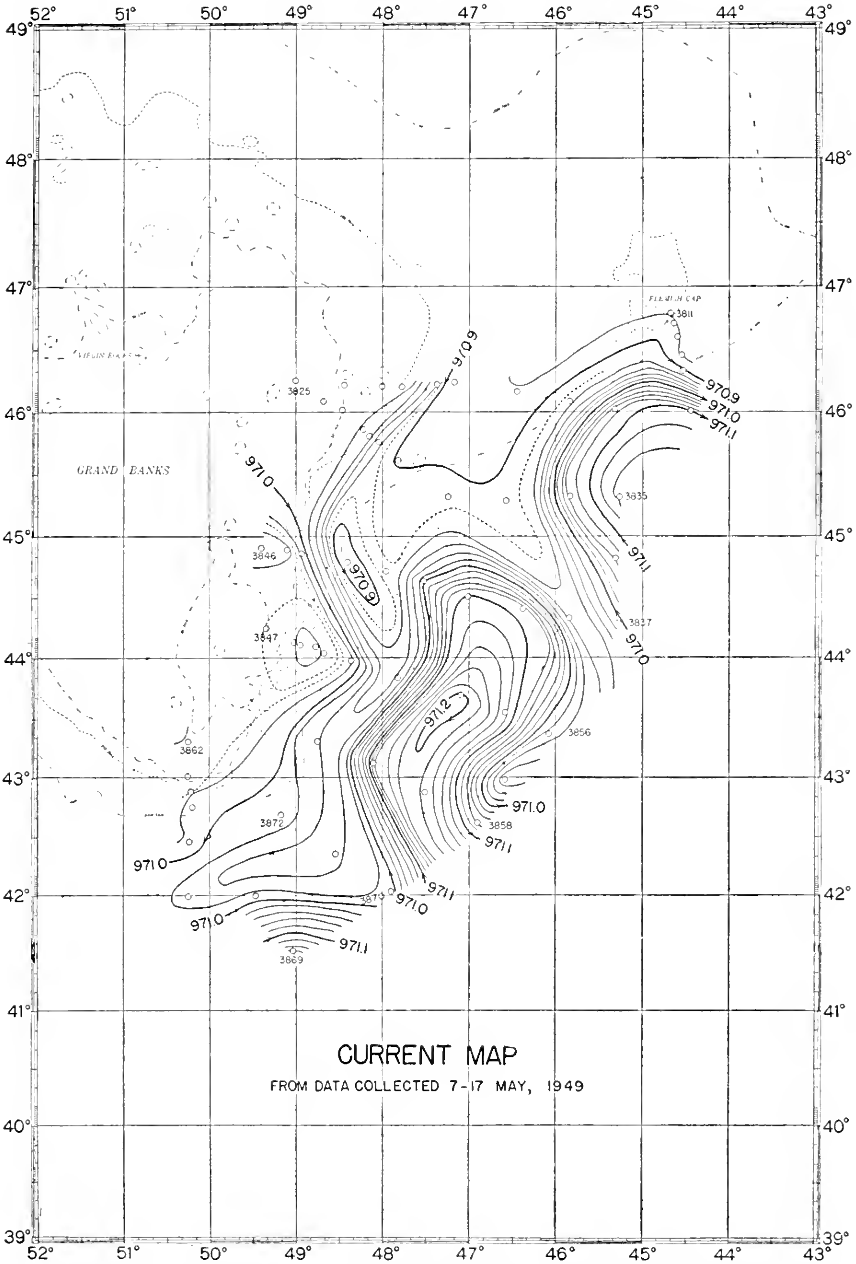

FIGURE 16.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 7–17 May, 1949. Oceanographic station positions are indicated and the station numbers given at turning points.

swept westward to ground on the Grand Banks northward of about 44° N. could have been expected to reach track C at about 49° W. Another area indicated by figure 15 as one of potential ice hazard to traffic following U. S.-European tracks was that southeastward of 42°30′ N., 47°00′ W. In the southwestern part of the area surveyed, the margins of the Gulf Stream system were present with dynamic heights greater than 971.1 dynamic meters. This dynamic isobath also approximated the boundary of the Atlantic Current water in the strong salient extending westward toward the banks between latitudes 43° N. and 45° N. With the current pattern found in this survey, the possibility of a break-through of Labrador Current water and bergs immediately southward of Flemish Cap was limited to latitudes north of 45°30′ N.

Figure 16 shows the dynamic topography found during the third cruise. A striking feature of this survey is the complicated current pattern in the area between about 44° N. and 45° N. and 48° W., and 50° W. A slow counterclockwise eddy has been shown centered near 44° N., 49° W., for simplicity, although the actual dynamic topography may have been better represented by a valley associated with the Labrador Current and extending southwesterly toward 44° N., 49° W., and bordered on its southern side by a promontory associated with the Grand Banks eddy and jutting easterly beyond the 1,000-fathom curve. Such an interpretation would be in accord with the clockwise circulation of the Grand Banks eddy, which is often intensified seasonally and centered around the shoalest part of the Grand Banks. In either case the axis of the Labrador Current is displaced seaward from its usual position and is well outside the 1,000-fathom curve at the 44th parallel. Northward of this latitude the Labrador Current maintained its previous strength and continued to supply the area of cold mixed water southeastward of the Tail of the Banks.

Large diameter clockwise eddies or salients which characterize the outer margins of the Atlantic Current in this region have been observed to progress along the boundaries of that current in the direction of its flow. With the time interval between surveys of the order of magnitude of 1 month and with the diameters of the eddies ranging between about 50 and 150 miles, the only cases in which successive surveys have permitted the identification of such progressing eddies or salients have been those in which the rate of progress has been slow. A comparison of figures 15 and 16 shows the possibility of interpreting the current patterns found during the second and third cruises as a case in which salients have progressed northeastward, with the salient which was centered at about the 44th parallel in figure 15 having moved to the vicinity of 45°30′ N., 45°00′ W., in figure 16, and the tongue shown in figure 15 near 42° N., 48° W.,

developing into the salient the axis of which is near the 47th meridian in figure 16. As the two surveys were made about 24 days apart and as the salients as thus identified differ in position by about 150 miles, their rate of progress would have averaged about 6 miles a day.

If bergs had been present the region of potential ice hazard would have moved from that southeastward of 42°30′ N., 47°00′ W., to that southward of 44°00′ N., 45°30′ W. These conditions, shown in figure 16, are such as accompany the "break-through" of bergs southeasterly from the area between the Grand Banks and Flemish Cap directly toward the U. S.-European steamer lanes. This break-through of bergs has occurred with sufficient frequency to be considered a seasonal characteristic of early May.

It has been assumed that the formation of the eddies or salients mentioned above is conditioned by factors peculiar to this region, such as bottom topography and the junction of the Labrador and Atlantic Currents.[2] It has been assumed further, that the position of the boundary between the Atlantic Current and the mixed water along its outer edge is controlled by the volumes of flow of the Labrador Current and the Atlantic Current, and that fluctuations in the size, shape, and degree of incursion of the salients are associated with fluctuations in the volume of flow of these two currents. An interesting corollary of such an hypothesis in the light of the apparently seasonal break-through is that there are seasonal fluctuations in the volume of flow of the Labrador Current or the Atlantic Current or both. Aside from its fundamental importance, it is important that the interrelationship of the elements stated above be determined, since it is regarded as a prerequisite to the practical forecasting of the geographical extent of the ice hazard from week to week.

While demonstration of the validity of the assumptions is not adequate, some supporting evidence has accumulated. In an earlier Bulletin of this series,[3] the location of the outer boundary of Atlantic Current water found during the ice seasons of 1934–41 was presented and discussed with relation to observed fluctuations in volume of flow of the Labrador Current and volume of flow of the Atlantic Current inferred from differences in sea level across the Charleston-Bermuda section. The criterion used for the boundary of Atlantic

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[2] See B. Haurwitz and H. A. Panofski, "Stability and Meandering of the Gulf Stream." Trans. Am. Geophys. Union, Vol. 31, No. 5, pp. 723–731 (Oct. 1950), Washington. In this paper its authors conclude that unstable waves may develop in the Gulf Stream after it leaves the continental shelf and that these unstable waves form the eddies or meanders along the outer edge of the Gulf Stream. The conditions are similar to those existing in that part of the Atlantic Current in the vicinity of the Grand Banks where the observed speed of progress of Atlantic Current salients is of the same order of magnitude as the speed of propagation of unstable waves computed from "realistic values" by Haurwitz and Panofski.

[3] Soule, Floyd M., and C. A. Barnes, "International Ice Observation and Ice Patrol Service in the North Atlantic Ocean—Season of 1941." U. S. Coast Guard Bull. No. 31, pp. 15–24 (1950), Washington.

Current water was the T–S relationship of 6° C corresponding to 34.95 $^\circ/_{\circ\circ}$. The area considered was that between the boundary so defined and the fixed limits formed by the 45th parallel, the 49th meridian, and a rhumb line extended from 43° N., 49° W., through 42° N., 47° W. This area was adjusted by the subtraction of 10,000 square kilometers for each million cubic meters per second volume of flow of the Labrador Current entering the area at the northwestern corner (section U). A remarkably good correspondence was found to exist between the difference in sea level Charleston-Bermuda and the adjusted area 13½ months later for each of the 28 surveys made during the ice seasons of 1934–41.

Since the postwar resumption of ice-patrol oceanography, one survey was carried out in 1948 and two in 1949. As the station networks of these surveys do not extend seaward far enough to include all parts of the Atlantic Current water boundary in the sector under discussion, the boundary cannot be delineated with accuracy. In each case an estimate has been made of the course of the boundary and the resulting area has been adjusted for the volume of flow past section U. Whether from errors in estimating the course of the Atlantic Current water boundary, or from more basic causes, these three surveys do not show the same good correspondence found for the earlier 8-year series of measurements. Expressed in units of 10,000 square kilometers, the adjusted areas differed from the values expected from the changes in sea level, Charleston-Bermuda, by the following amounts: June 1948, 5.1 too large; April 1949, 1.4 too small; May 1949, 5.0 too large. Thus, some of the evidence does not clearly support the assumption that the position of the boundary is controlled by the volumes of flow of the Labrador Current and the Atlantic Current.

In 1948 the T–S characteristics of the different water masses in the Grand Banks region could not be established except in general terms, partly because of the small number of stations available for examination and partly because the mixed water did not have the uniformity which usually has characterized it as a virtual water mass. The surveys of April and May, 1949, provided enough observations to determine the approximate course of the T–S curves representing the Labrador Current water, the Atlantic Current water, and the mixed water and these are shown in figure 17 as solid lines. The broken lines represent the T–S relationship found during the 8-year period 1934–41. Except for the upper layers, but two stations from the April survey (3767 and 3779) could not be properly classified, while three stations (3852, 3858 and 3869) from the May survey were atypical. In discarding observations from the upper layers at any station, we are in reality recognizing that at those stations the mixing of water from the parent water masses has not been carried far enough to attain

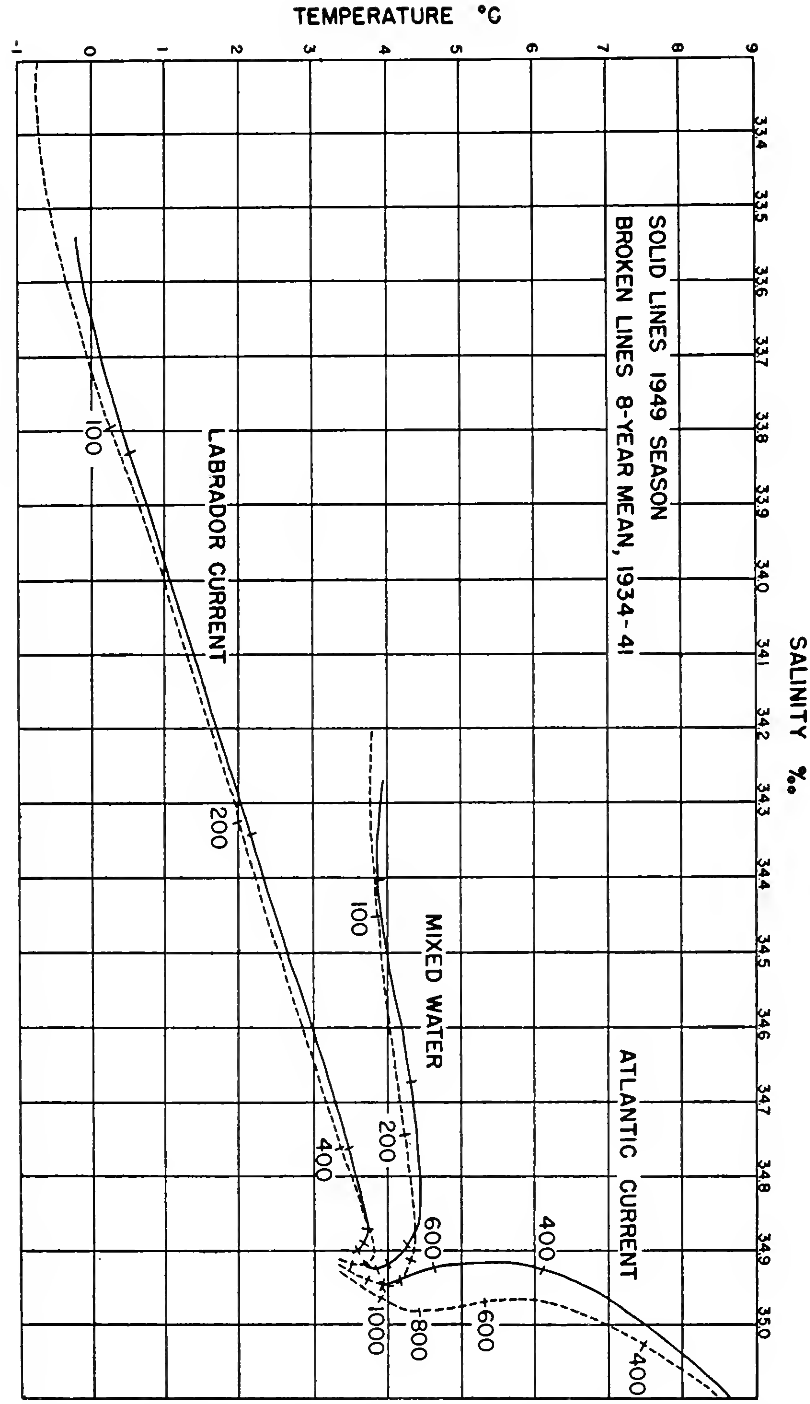

FIGURE 17.—Temperature-salinity correlation for Labrador Current water, Atlantic Current water, and mixed water found in the Grand Banks region. Solid lines show conditions during the 1949 season and broken lines represent the 8-year mean for the period 1934–41. An approximate depth scale in meters is given.

the uniformity found below those layers. Thus water of varying proportions of the parent water masses was found at some stations down to depths of as much as 200 meters, although at most stations the water approached the characteristics of one of the three T–S relationships at depths greater than 70 meters.

From figure 17 it will be seen that down to depths of about 400 meters the Labrador Current water and the mixed water followed much the same characteristic curve as was found for the earlier 8-year mean. These two water masses at the deeper depths, and the Atlantic Current water at all depths, were colder and fresher than the 8-year mean. However, since the differences from the mean temperatures and salinities for the 8-year period oppose each other in affecting the density, changes in σ_t were small and, for the levels of 600, 800, and 1,000 meters were respectively +0.01, −0.02 and −0.02.

To facilitate comparisons of conditions found during different surveys and during different years, certain sections designated T, U, and W have been repeated whenever a survey could be accommodated to permit their occupation. They are located as follows: T running southeasterly from about 46°20′ N., 49°00′ W.; U extending east and west at about the 45th parallel; and W running southerly off the Grand Banks at about the 50th meridian.

The earlier observations (dating from 1934) probably have not been well enough distributed in point of time so that their average values may be taken as normals, but until other data are available these averages are the best basis for comparison that we have and are made use of here. In the following it will be understood that volumes of flow are given in units of 1 million cubic meters per second and temperatures expressed in ° C. With respect to normals and time of year, the April survey showed the Labrador Current passing section T to have a volume of 3.40 (0.53 below normal) and a mean temperature of 1.55 (0.59 below normal). At section U, the volume of flow was 2.87 (2.97 below normal), and the mean temperature was 2.85 (0.81 above normal). At section W, the volume was 2.83 (1.04 below normal), and the mean temperature was 2.43 (0.03 below normal). During the May survey, the volumes of flow past sections T, U, and W were respectively 1.67 (1.88 below normal), 3.51 (1.95 below normal), and 2.19 (1.42 below normal), with corresponding mean temperatures of 1.76 (0.44 below normal), 1.75 (0.39 below normal), and 4.58 (1.96 above normal).

Thus the volume of flow was below normal at each section at each survey and except for section U during the April survey and section W during the May survey, the mean temperature was also below normal. As the Labrador Current is formed by the junction of the Baffin Land Current and that part of the relatively warm West Greenland Current, which branches westward south of Davis Strait,

it would seem that the explanation of the deficiency in volume of flow of the Labrador Current in the Grand Banks region accompanied by a subnormal mean temperature is to be sought in a possibly decreased contribution from the West Greenland Current.

In 1948 a beginning was made in the study of the area just northward of the Grand Banks where the Labrador Current divides into a western branch which flows southward along the Avalon Peninsula of Newfoundland, and an eastern branch which follows the eastern edge of the Grand Banks. Three sections, disposed in the form of a triangle which included the branch point, were occupied. In 1949 this triangle was occupied twice; once during the period 3–6 June, and again about two weeks later on 17–20 June.

Figures 18 and 19 show the dynamic topography at the sea surface and at the 100-decibar surface respectively, derived from the first occupation of the triangle; and figures 20 and 21 show the topography at similar surfaces from the second occupation of the triangle. From figure 18 it is concluded that bergs crossing the 49th parallel eastward of about 51°45′ W. would probably follow the eastern branch of the current; that bergs crossing the 49th parallel westward of about 52°00′ W. would probably follow the western branch along the Avalon Peninsula; and that bergs crossing this parallel at intermediate longitudes would probably strand on the northern slope of the Grand Banks. Figure 20 indicates that these critical longitudes were much the same (51°50′ W., and 52°00′ W., respectively) during the second occupation of the triangle.

One of the questions of primary importance to the practical application of studies of the oceanography of this region is whether the current pattern at the sea surface is sufficiently representative of the circulation in the upper 150 or 200 meters to permit the movement of deep-draft bergs to be deduced from the dynamic topography of the sea surface. Comparison of figures 19 and 21 with figures 18 and 20 respectively shows a very encouraging similarity of current pattern at the sea surface and at the 100-decibar surface for each of the two occupations of the triangle.

In considering figures 18 through 21, it should be borne in mind that the occupations of the triangle differ from the usual survey in that the measurements have been confined to the periphery of the area involved and that consequently the deduced current pattern within the triangle is subject to errors which increase with the distance from the sides of the triangle. Thus, while the points of entry or emergence of the dynamic isobaths are well defined, their courses within the triangle can be shown with much less certainty.

The drift of an iceberg which entered the area at about the time of the first occupation of the triangle added information on the question of whether or not the dynamic topography of the sea surface

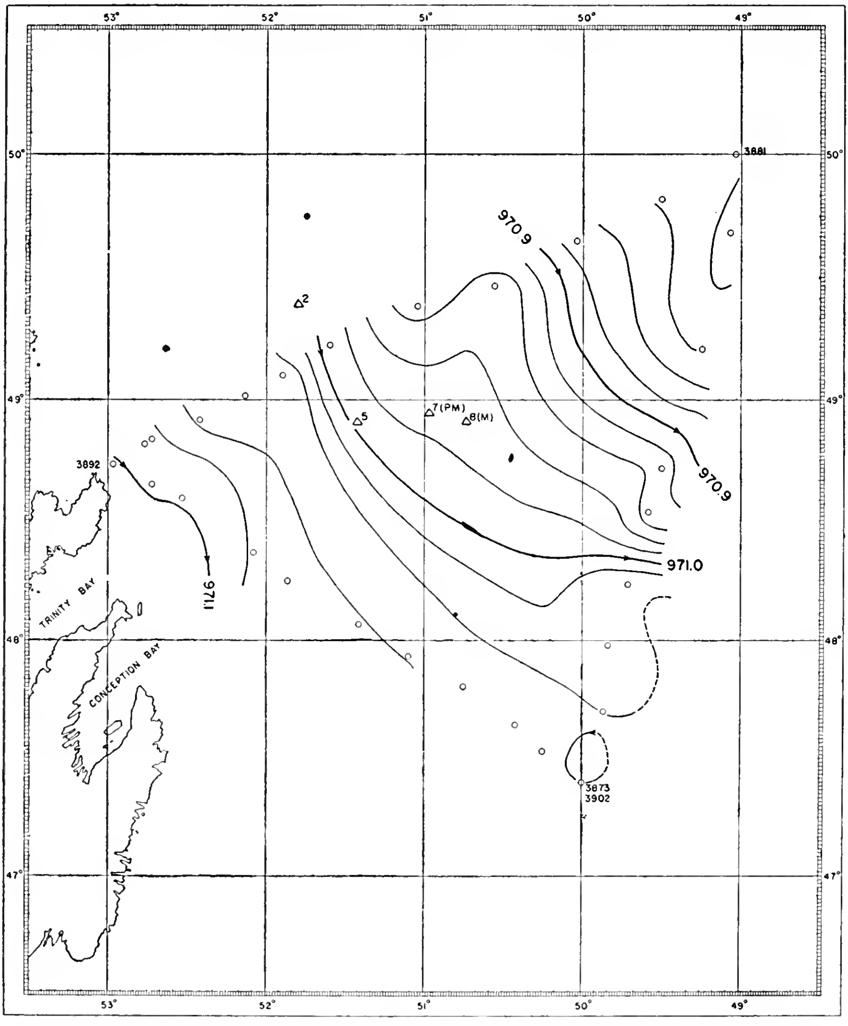

FIGURE 18.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 3–6 June, 1949. Oceanographic station positions are indicated and the station numbers given at turning points.

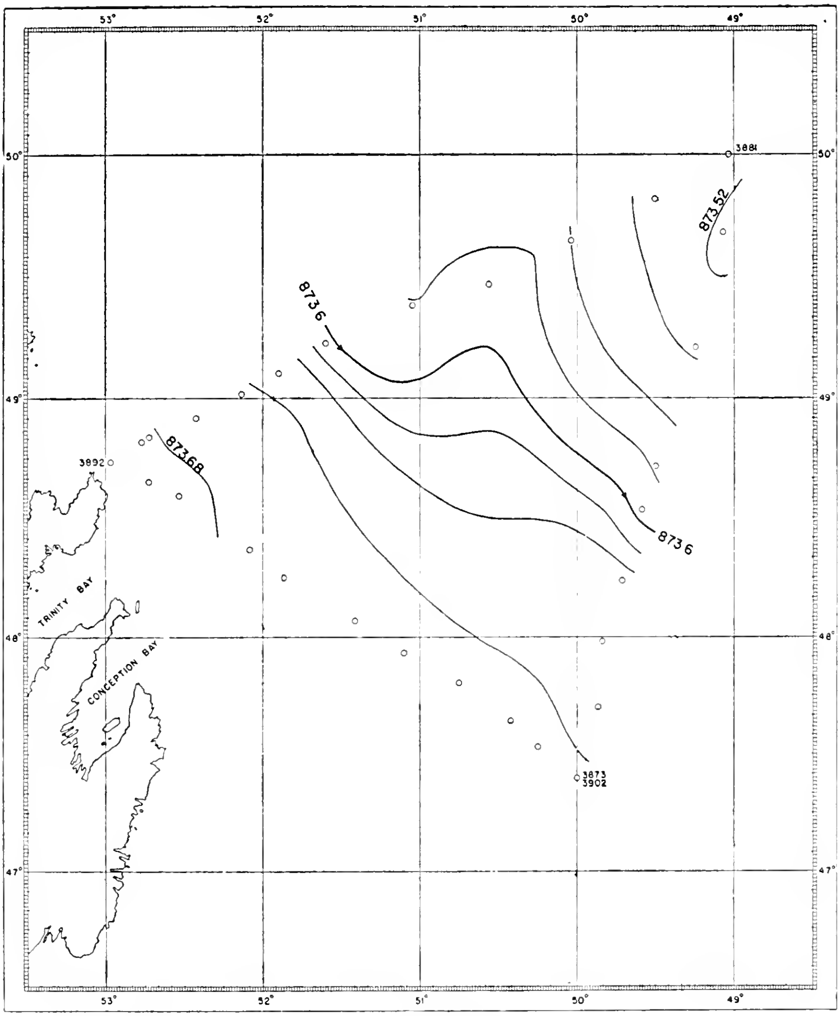

FIGURE 19.—Dynamic topography of the 100-decibar surface relative to the 1000-decibar surface, from data collected 3–6 June, 1949. Oceanographic station positions are indicated and the station numbers given at turning points.

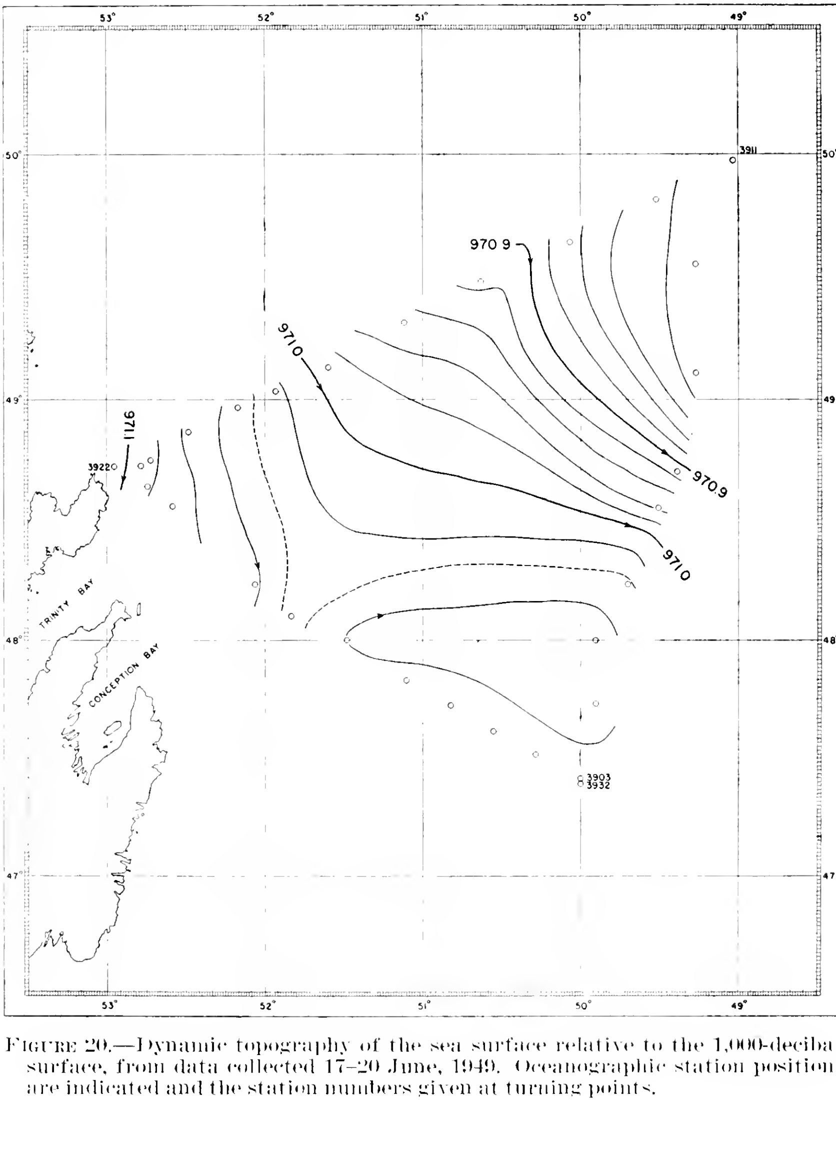

FIGURE 20.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 17–20 June, 1949. Oceanographic station positions are indicated and the station numbers given at turning points.

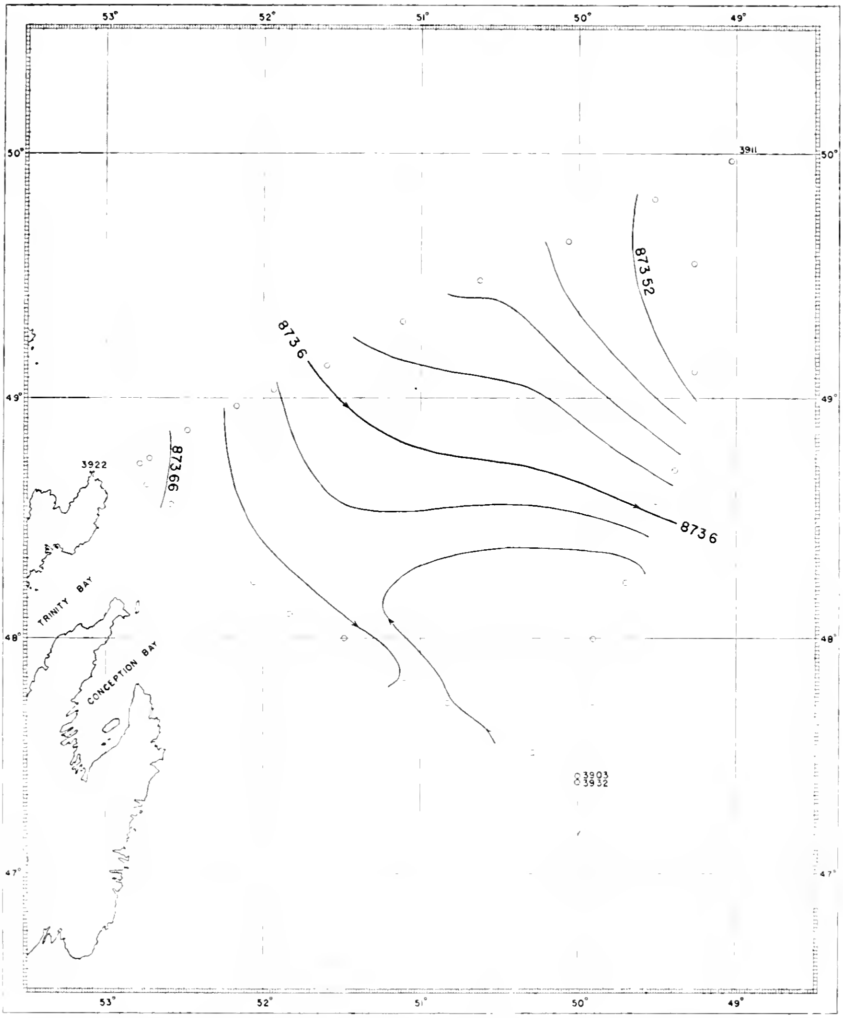

FIGURE 21.—Dynamic topography of the 100-decibar surface relative to the 1,000-decibar surface, from data collected 17–20 June 1949. Oceanographic station positions are indicated and the station numbers given at turning points.

may be of use in determining the effects of water movements on bergs in the area. The berg's position on the 2d and 5th of June, from air sightings, are shown in figure 18. Upon completion of the occupation of the triangle, the *Evergreen* located the berg in the position indicated on the afternoon of the 7th and drifted with the berg until the afternoon of the 8th. The berg's position at noon of that day is also shown in figure 18. During the interval that the *Evergreen* was in the vicinity of the berg, seven current determinations were made with a von Arx current meter. The vector sum of the currents so determined agreed with the observed set of the berg as to direction but was smaller in magnitude than the observed drift and, if the surface current be assumed to equal the berg's drift, would have required a value of the factor K equal to about 1.15. This is quite reasonable in view of the comparatively shallow water and relatively large proportion of the water column presumed to be in motion. Quiet weather prevailed during the period the berg was under observation by the *Evergreen*. The berg's path between the sightings on the 2d and the 5th is in accord with the dynamic isobaths shown in figure 18, and is in that part of the area where the topography is best known. The easterly movement of the berg between the 5th and the 7th, across the isobaths as drawn, may be an exaggeration of the error in drawing the isobaths when it is considered that the berg was small (and consequently more affected by surface conditions) and that from the time of its sighting on the 5th until the evening of the 6th the winds were from the westerly quadrants and briefly reached force 7 from the southwest on the evening of the 5th.

Not much is known regarding the stability of the circulation pattern in the vicinity of this branch point of the Labrador Current. The repetition of the occupation of the triangle 2 weeks after the first occupation was made in the hope of getting some information on how rapidly the circulation pattern changes in this region. Comparison of figure 18 with figure 20 shows very little change in the general pattern during the 2-week interval.

The proportion in which the Labrador Current divides into its eastern and western branches is probably best based on the proportion of the volume of flow in the two branches. Expressed in millions of cubic meters per second the volume of flow past the northern section was computed to be 4.13 during the first occupation and 4.44 during the second occupation. For the southwestern section the first and second occupations showed 0.72 and 0.84 respectively; and for the southeastern section the volume of flow was computed to be 3.45 and 3.63. Thus, during the first occupation about 83 percent of the volume of flow followed the eastern branch and about 81 percent followed the eastern branch during the second occupation. This is to be compared to about 78 percent found during July 1948.

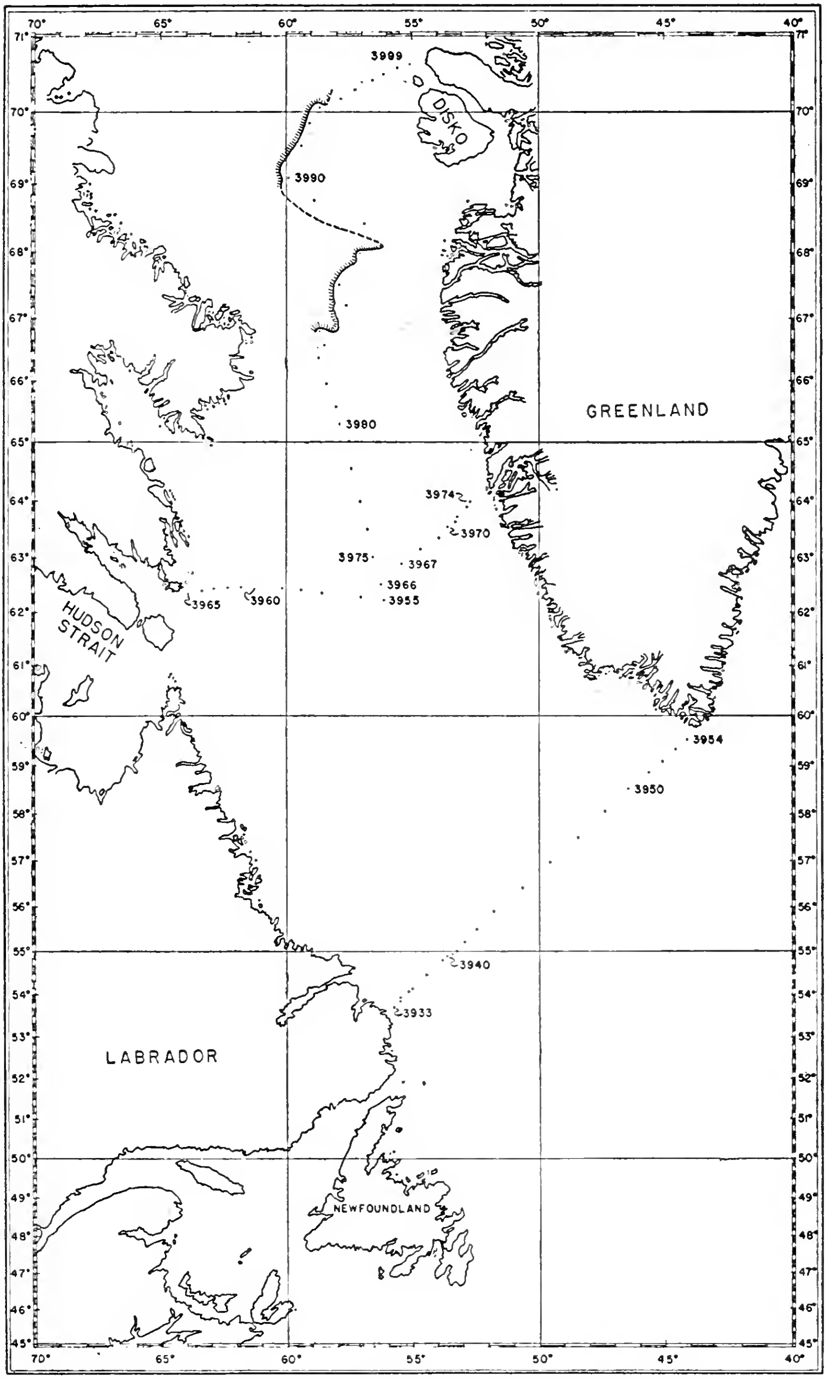

FIGURE 22.—Location of oceanographic stations occupied in the Labrador Sea, Davis Strait and Baffin Bay during the 1949 postseason cruise.

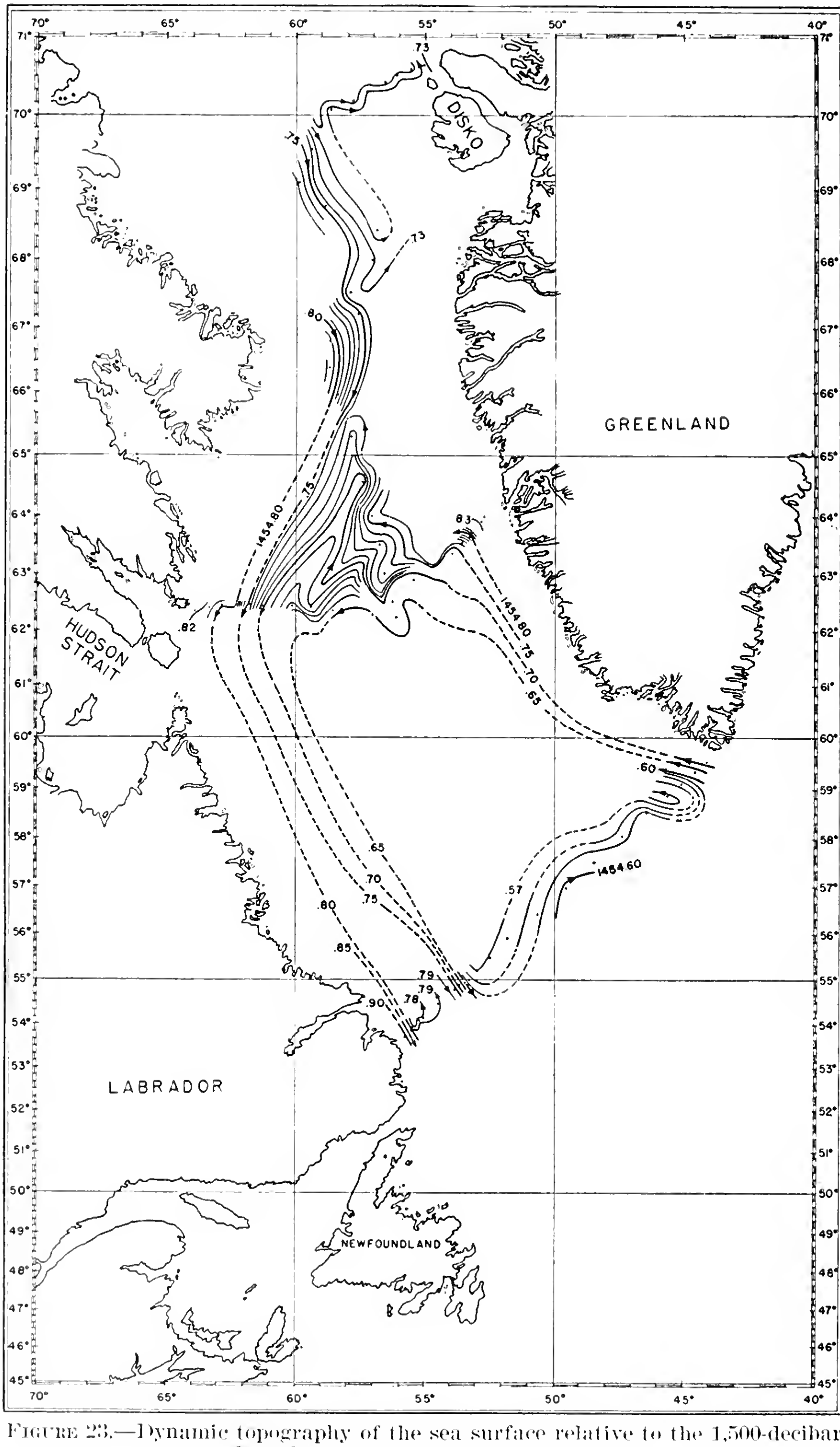

FIGURE 23.—Dynamic topography of the sea surface relative to the 1,500-decibar surface, from data collected 5–20 July 1949.

Figure 22 shows the location of the oceanographic stations occupied in the Labrador Sea, Davis Strait, and Baffin Bay on the postseason cruise. Figure 23 shows the dynamic topography of the sea surface relative to the 1,500-decibar surface based on these stations. Only the major features of the current pattern are shown since the distances between the different sections are too great to develop the details. The shoal on the Labrador shelf off Hamilton Inlet is probably responsible for the irregular course of the dynamic isobaths of 1454.78 and 1454.79. The total Labrador Current passing the South Wolf Island section from the beach out to station 3943 was computed at 5.16 million cubic meters per second with a mean temperature of about 2.3° C. Of this amount 1.45 million cubic meters per second are to be seen recurving northeastward between stations 3943 and 3947. By difference, this leaves 3.7 continuing southward. This figure is about 0.7 less than the volume of flow found at the northern section of the second occupation of the triangle about 2 weeks earlier, so it is presumed that about half of the 1.45 moving northeastward between stations 3943 and 3947 came from the vicinity of Flemish Cap and some of this probably represents a contribution from the outer margins of the North Atlantic eddy.

Station 3951 seems to be the center of a closed eddy. The volume of flow between stations 3947 and 3951 is computed as 2.63, which is 1.18 million cubic meters per second greater than the 1.45 found between stations 3943 and 3947, whence 1.18 has been deducted from the 3.70 found to be flowing northwestward between station 3951 and the beach at Cape Farewell to give 2.52 million cubic meters per second as the volume of flow of the West Greenland Current continuing northwestward along the Greenland coast. Of this 2.52 about 1.45 has been contributed from the southwestward, some of it from the closed circulation in the Labrador Sea and some of it as a direct contribution from the outer margins of the Atlantic Current, leaving only about 1.07 as the contribution to the West Greenland Current from the east of Cape Farewell. The mean temperature of this contribution from east of Cape Farewell was computed to be 3.22° C. and that of the West Greenland Current 3.62° C.

Farther north along the west coast of Greenland the section running from the deep water of the Labrador Sea to Fyllas Bank was occupied again. This section has again presented difficulties in the reconciliation of the results obtained there with other observations. This time the volume of flow computed between station 3966 and the beach, 3.95 million cubic meters per second, is about 1.5 larger than would have been expected from the results obtained off Cape Farewell, and is about 1.0 larger than the volume of flow southward past the Loks Land section between station 3956 and the beach. The most reasonable picture consistent with the other observations would re-

quire the southward return, between stations 3956 and 3966, of the western part of a closed counterclockwise eddy having a volume of flow of about 1.5 million cubic meters per second. This would stipulate the existence of a ridge in the dynamic topography between stations 3955 and 3966 on the east and 3956 on the west. In the exchange of water through Davis Strait, it would also mean a net contribution from Baffin Bay to the Labrador Sea of about 0.5 million cubic meters per second.

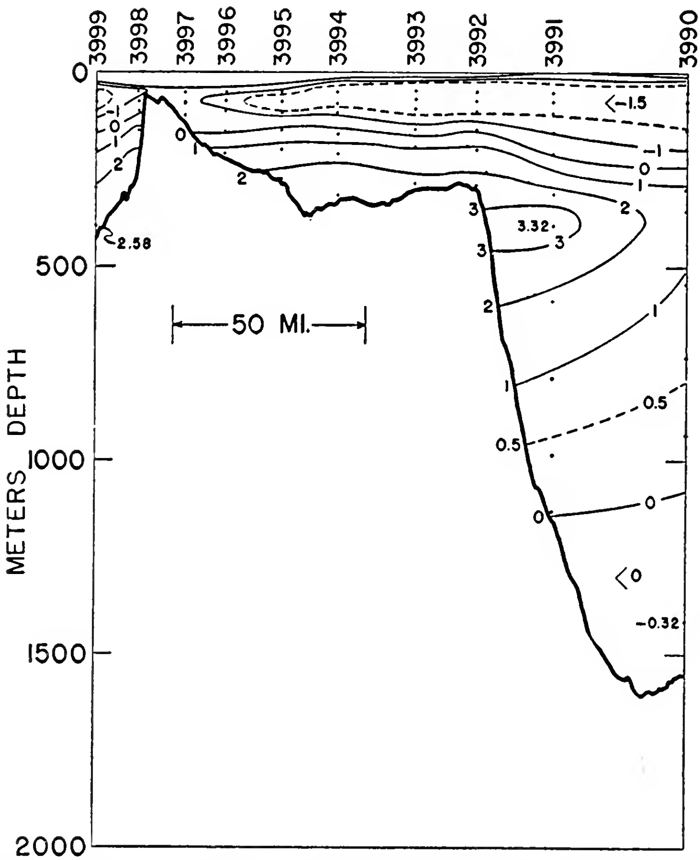

FIGURE 24.—Temperature distribution along a section extending from the deep water of southern Baffin Bay to the vicinity of the Nugssuak Peninsula, Greenland, 19–20 July 1949.

The Labrador Current passing the Loks Land section between station 3956 and the beach was computed to be 2.92 million cubic meters per second. This is made up of that part of the Baffin Land Current which flows southward across Davis Strait ridge and that part of the West Greenland Current which crosses to the American side south of this ridge. The latter, between stations 3956 and 3980, is

computed at 0.40, while that part of the former between station 3980 and 3984 is computed as 1.70. This would leave, by difference, about 0.8 million cubic meters per second of the Baffin Land Current between stations 3984 and the beach.

If it is assumed that there was no significant net contribution to the Labrador Sea through Hudson Strait, the difference in volumes of flow past the Loks Land and South Wolf Island sections indicates about 2.2 million cubic meters per second of the circulation of the Labrador Sea passing the latter section was located toward the center of the Labrador Sea from station 3956.

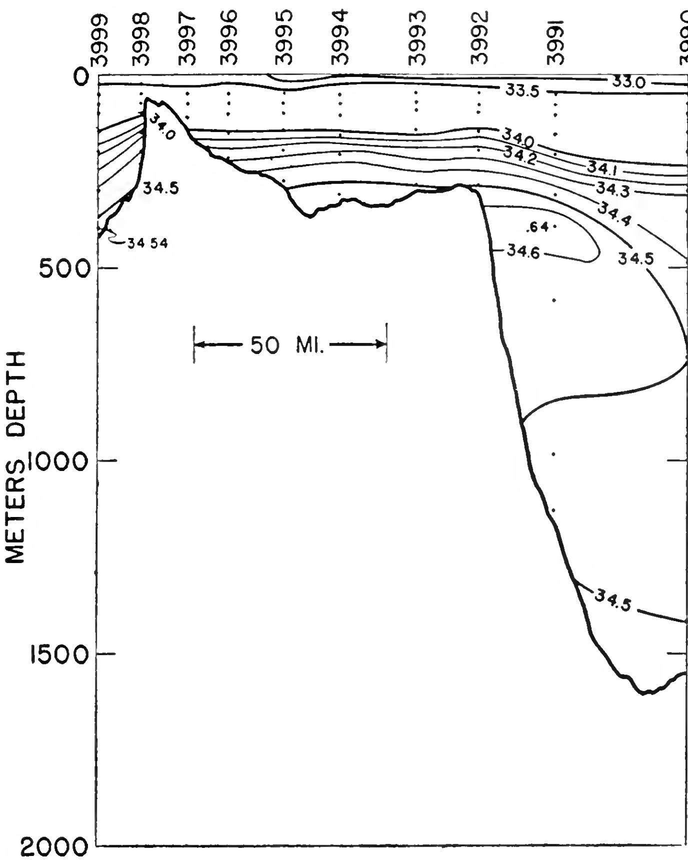

FIGURE 25.—Salinity distribution along a section extending from the deep water of southern Baffin Bay to the vicinity of the Nugssuak Peninsula, Greenland, 19–20 July 1949.

The observations taken along the section ending off the Nugssuak Peninsula at the northern end of the Vaigat are contradictory. The deepest station taken north of Davis Strait ridge and the only one in Baffin Bay extending to a depth of 1,500 meters was station 3990.

This station therefore served as a key station in referring the dynamic heights of the shallower stations to the 1,500-decibar surface. The dynamic topography at all levels above the 1,000-decibar surface was similar to that shown in figure 23 for the sea surface. Between about 1,000 and 1,500 meters at stations 3990 and 3991 a weak northerly flow was indicated by the dynamic heights with a southerly flow above about 1,000 meters. Figures 24 and 25 show the distribution of temperature and salinity respectively along this section and show maxima of each at about 400 meters at station 3991. The temperature of more than 3° C. and the salinity of more than 34.60 ‰ indicate the West Greenland Current as the source of this water and consequently indicate a northward movement here, although at this level the dynamic topography shows a southward movement of about a half a centimeter per second. The results, therefore, of the computations of volume of flow past this section are to be regarded with suspicion and the northward flow, inshore of station 3992, of 0.38 million cubic meters per second is considered to be too small, whereas the southward flow, in the upper levels between stations 3990 and 3992, of 1.05 million cubic meters per second, is considered to be too large.

Figure 26 shows the temperature distribution along the vertical section from South Wolf Island to Cape Farewell found in 1949. On the Labrador shelf, the characteristic temperature minimum of the Labrador Current is present. The tongue of warmer water extending to bottom beneath the Labrador Current at the edge of the shelf is not as warm as usual and only slightly exceeds 3.4° C. This is in agreement with the deficiency of the warmer offshore part of the Labrador Current anticipated from the subnormal volumes of flow and mean temperatures found in the Grand Banks region earlier in the year. On the Greenland side the temperature maximum associated with the Irminger Current component of the West Greenland Current is decidedly colder than usual and less than 5° C. The temperature minimum of the intermediate water of the Labrador Sea is slightly less than 3.3° C. This is somewhat colder than in 1948, but still warmer than the approximately 3.17° found consistently during the summers of 1934 through 1939. The displacement of this temperature minimum toward the Labrador side is considered the result of water from the vicinity of Flemish Cap and the outer margins of the Atlantic Current entering the circulation of the Labrador Sea on the Greenland side.

The marked deficiency in the Irminger Current component of the West Greenland Current, noted in the discussion of the volume of flow at the Cape Farewell section and above in connection with the lower than usual temperature maximum of the West Greenland Current, can best be shown by consideration of the salinity. Figures

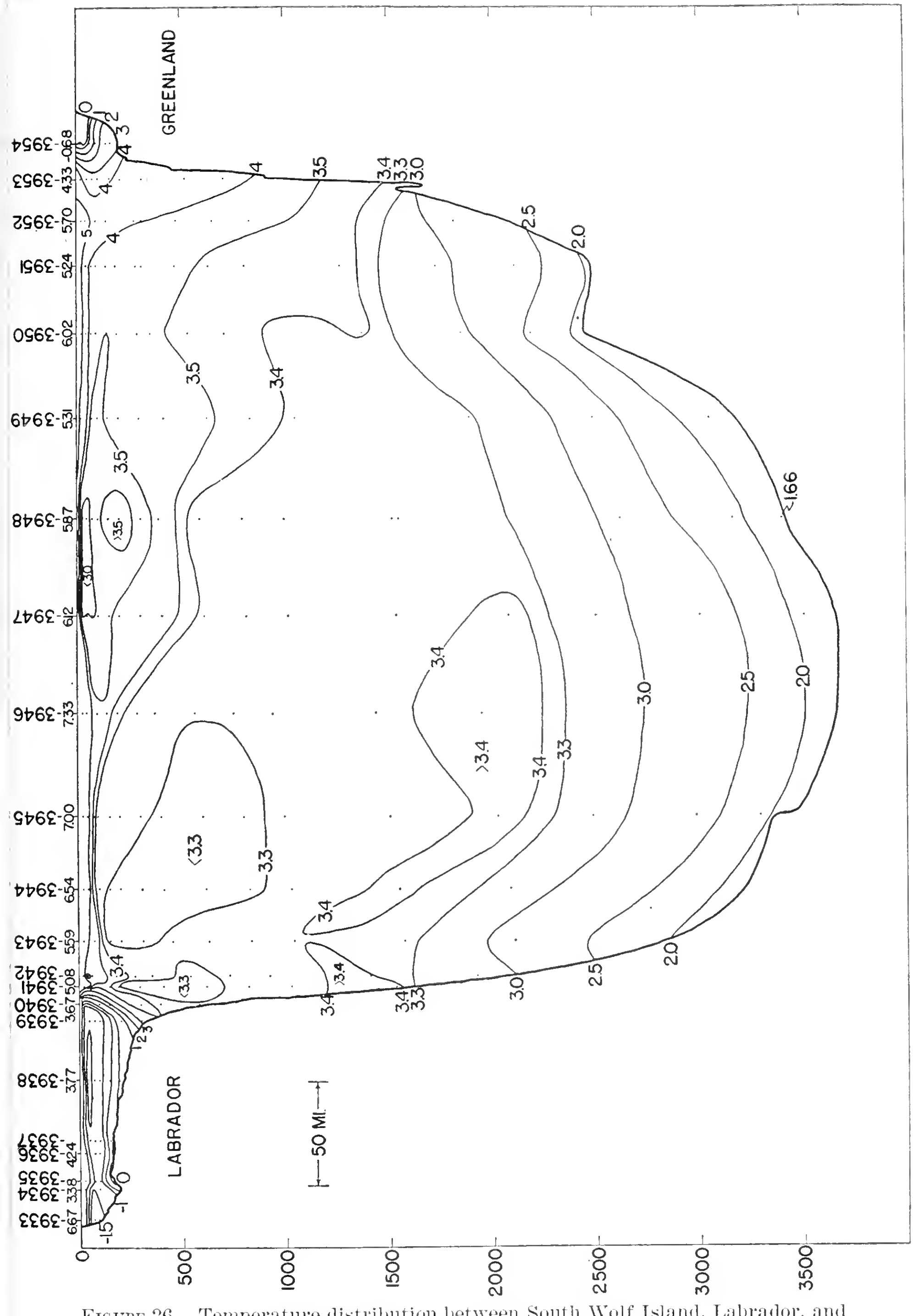

FIGURE 26.—Temperature distribution between South Wolf Island, Labrador, and Cape Farewell, Greenland, 5–9 July 1949.

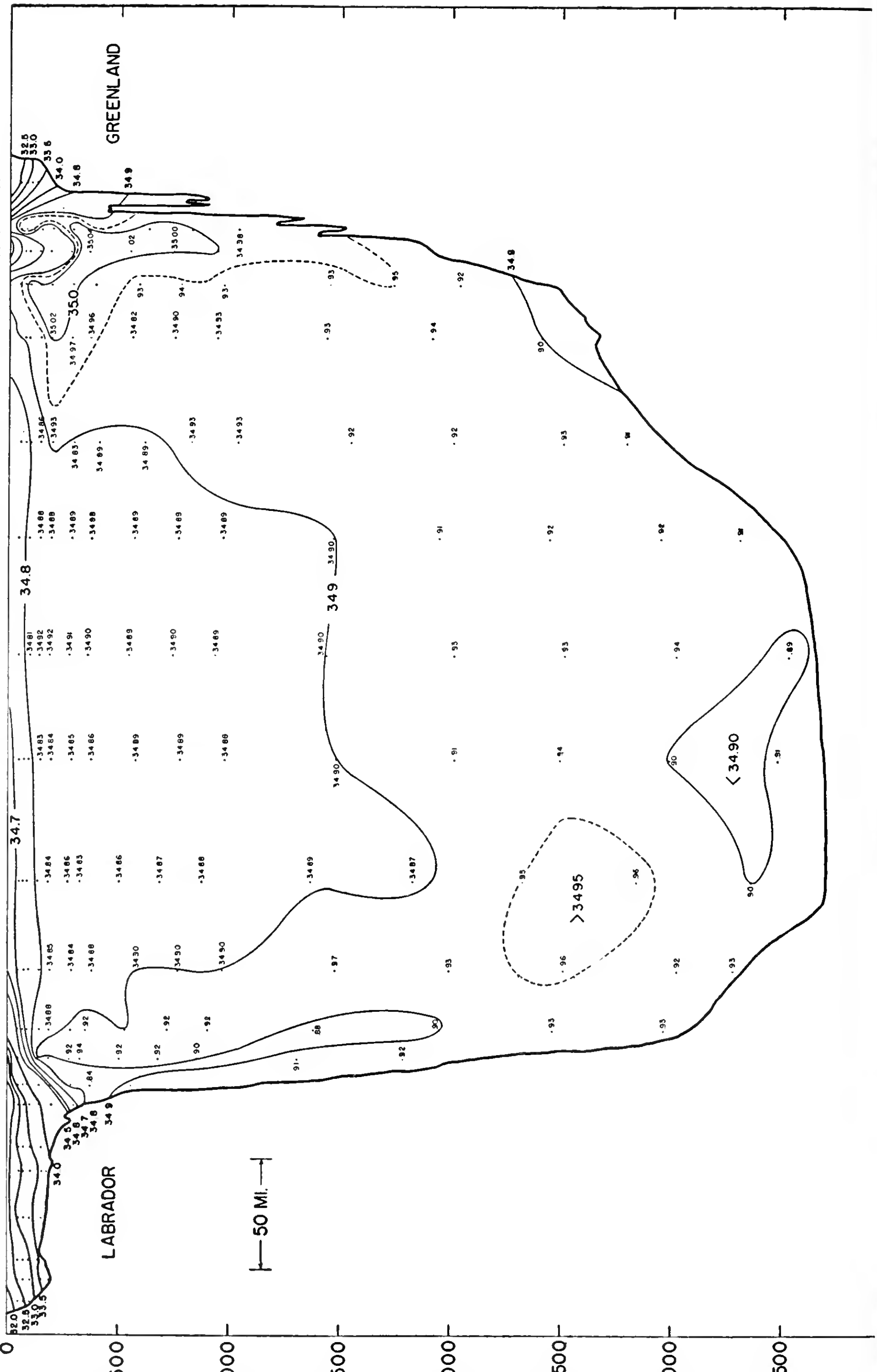

FIGURE 27.—Salinity distribution between South Wolf Island, Labrador, and Cape Farewell, Greenland, 10–15 July 1939.

FIGURE 28.—Salinity distribution between South Wolf Island, Labrador, and Cape Farewell, Greenland, 25–29 June 1940.

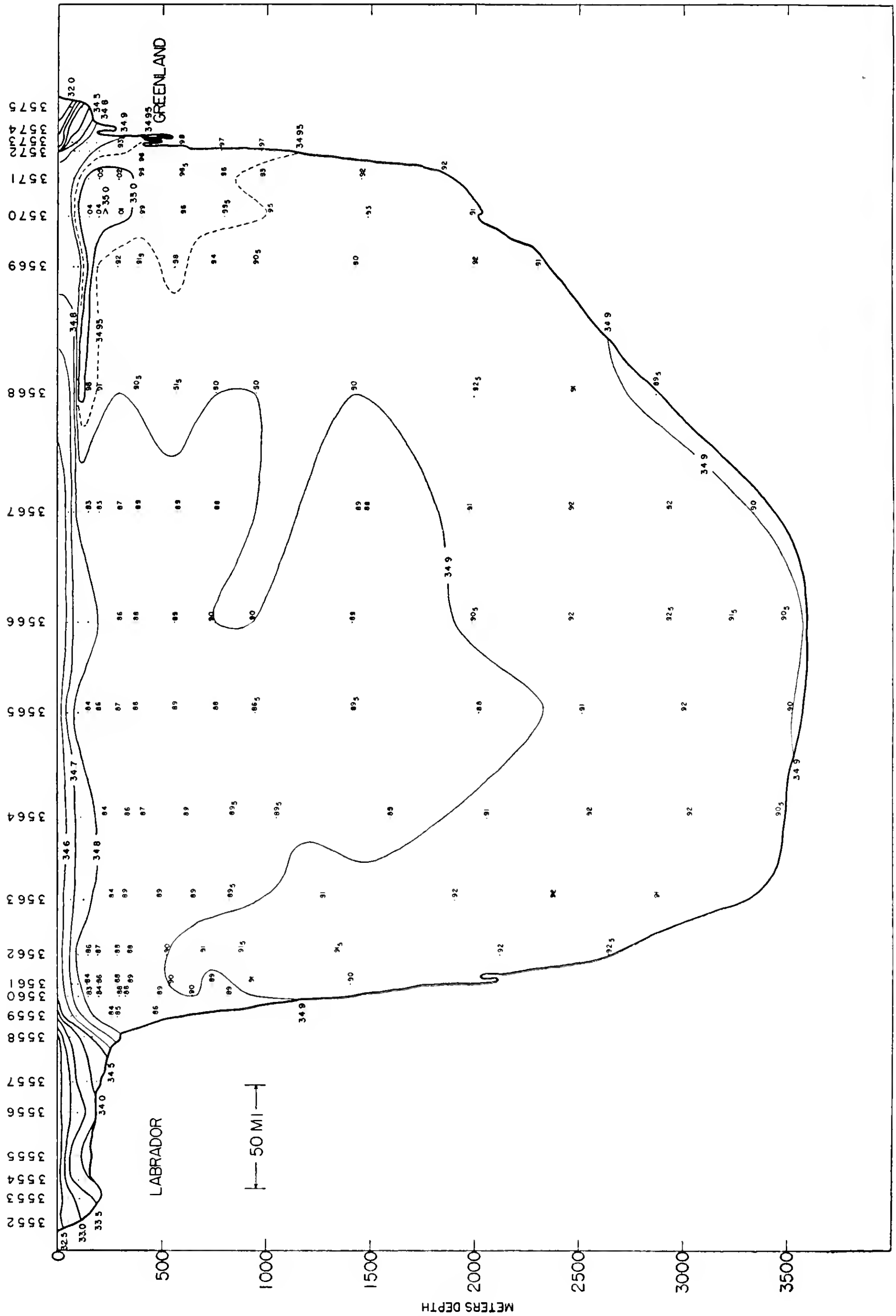

FIGURE 29.—Salinity distribution between South Wolf Island, Labrador, and Cape Farewell, Greenland, 24–29 July 1941.

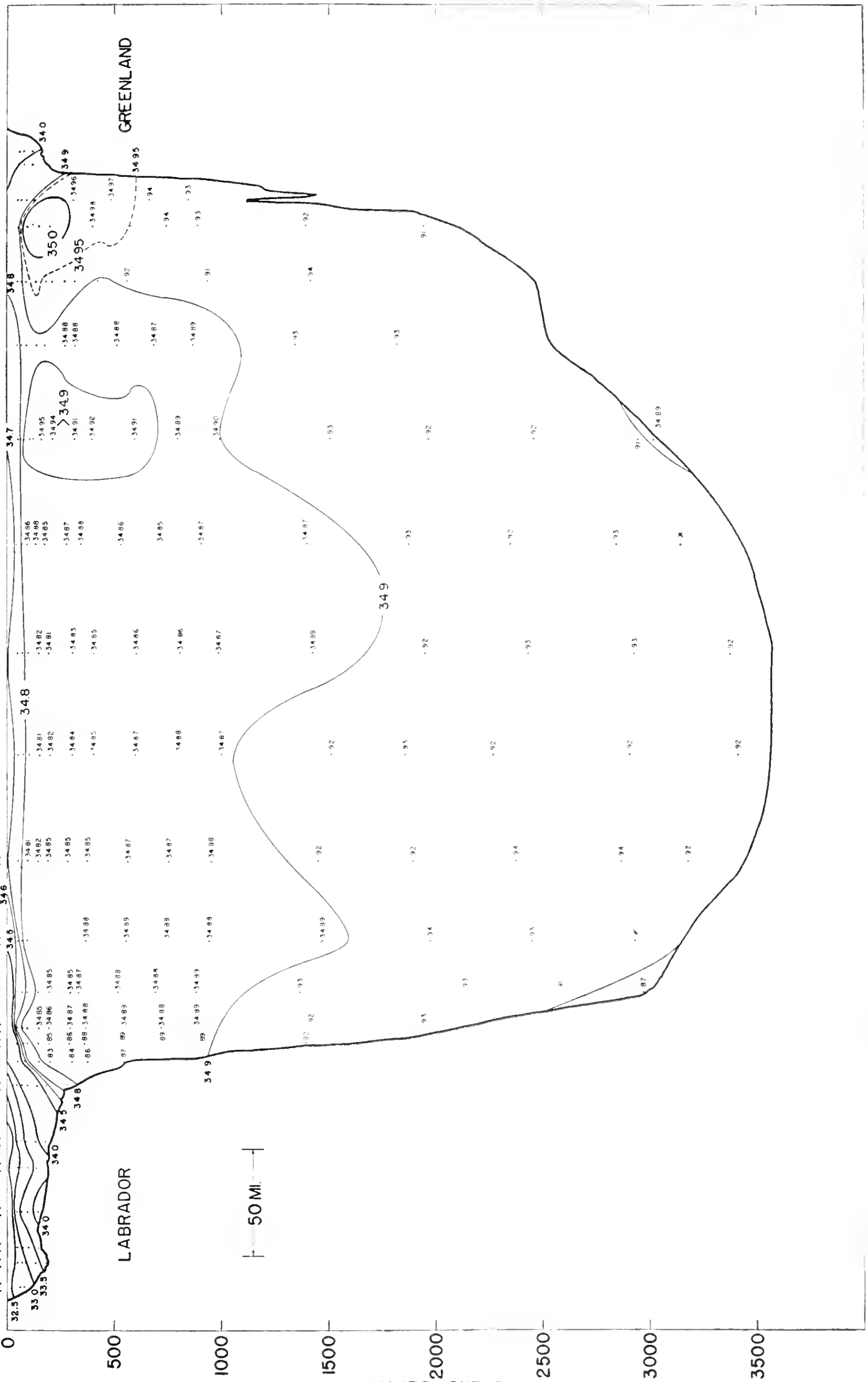

Figure 30.—Salinity distribution between South Wolf Island, Labrador, and Cape Farewell, Greenland, 11–17 July 1948.

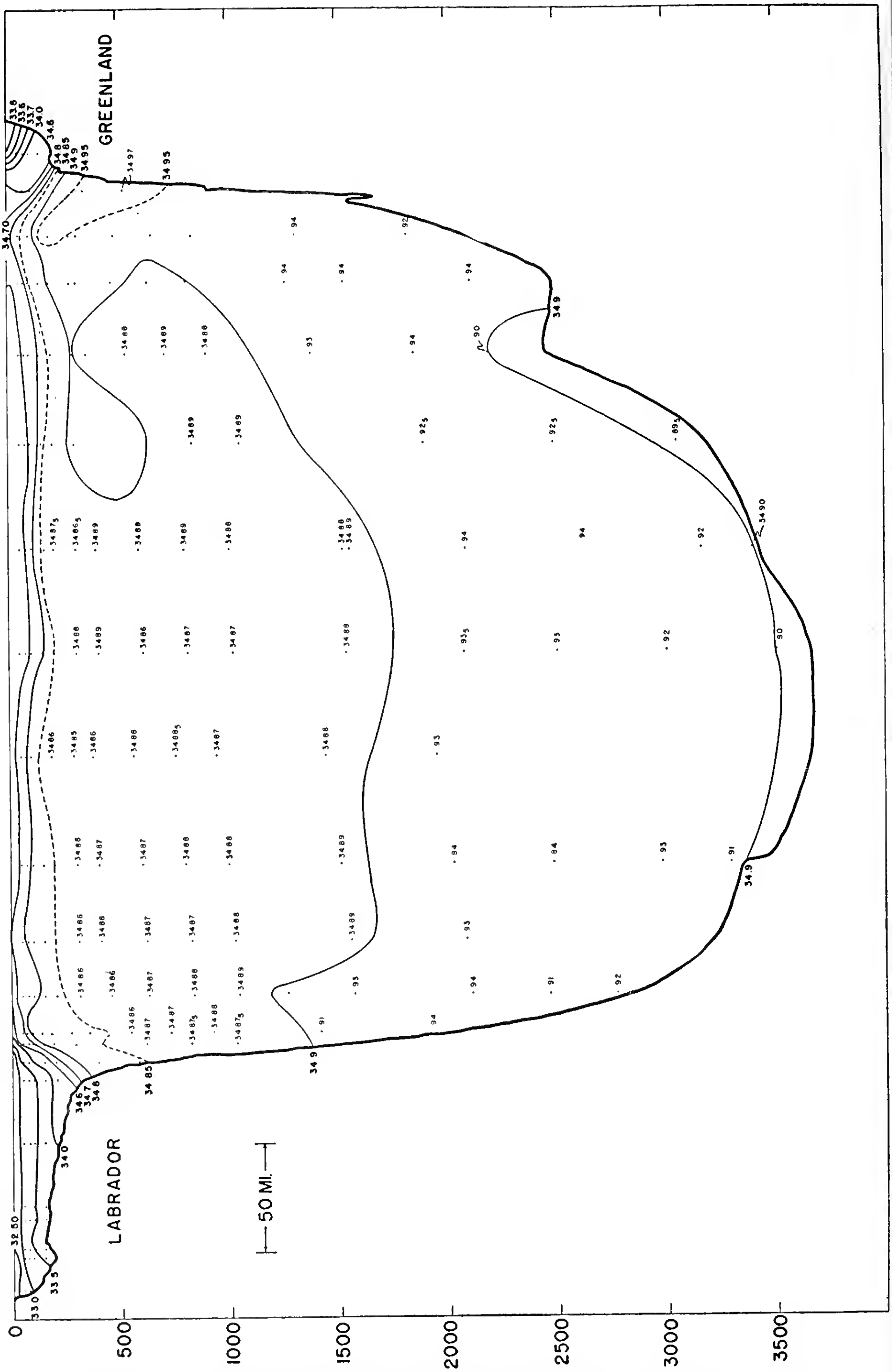

FIGURE 31.—Salinity distribution between South Wolf Island, Labrador, and Cape Farewell, Greenland, 5–9 July 1949.

27 through 31 show the salinity distribution in this section found during the postseason cruises of 1939, 1940, 1941, 1948, and 1949 respectively. The maximum salinity in the core of the Irminger Current component of the West Greenland Current at this section observed during these cruises was 35.04, 35.03, 35.05, 35.04, and 34.97 $^{\circ}/_{\circ\circ}$ respectively. The remarkable uniformity of the maximum salinity of this water has come to be regarded as a characteristic of this part of the West Greenland Current and the extent of the cross sectional area has been sufficient that the spacing of the stations designed to permit the construction of a good vertical section of anomaly of specific volume has given short enough station intervals to reveal the shape of this warm and salty core.

The temperature is a more effective variable than the salinity of the Irminger Current water. It is therefore that the drop in the salinity shown in figure 31 compared with figures 27 through 30 is such a striking demonstration of the almost total absence of Irminger Current water off Cape Farewell in 1949. Physically and climatologically it is the variation in temperature, rather than salinity, of this warm water core that is of importance. The drop in temperature of the core accompanying the drop in salinity was sufficient to increase its density by about 0.10 in σ_t above the usual values. As it is the Irminger Current component that makes the West Greenland Current a warm current, and as the West Greenland Current supplies most of the water-borne heat to Baffin Bay and forms the relatively warm offshore part of the Labrador Current, any prolonged deficiency in Irminger Current water reaching Cape Farewell can be expected to have serious repercussions in its effect on the extent and duration of the ice cover in Baffin Bay and the mortality rate of bergs in the journey from their parent glaciers in Greenland to the position of their ultimate disintegration near the steamer lanes in the vicinity of the Grand Banks.

In earlier bulletins of this series it has been noted that while the year to year fluctuations in the volume of flow of the West Greenland Current off Cape Farewell are so large as to mask any regular seasonal fluctuation, the mean temperature of this current seemed to have a marked seasonal increase during the summer months. Because of the rapid increase, in spite of the fact that a relatively small part of the volume of water involved is exposed to the surface, it would seem more reasonable to expect the fluctuation to be the result of a changing proportion of the parent currents which join northeastward of Cape Farewell to make up the West Greenland Current. A seasonal fluctuation in the mean temperature of the West Greenland Current can result from seasonal fluctuations in the relatively cold East Greenland Current or the relatively warm Irminger Current, or both.

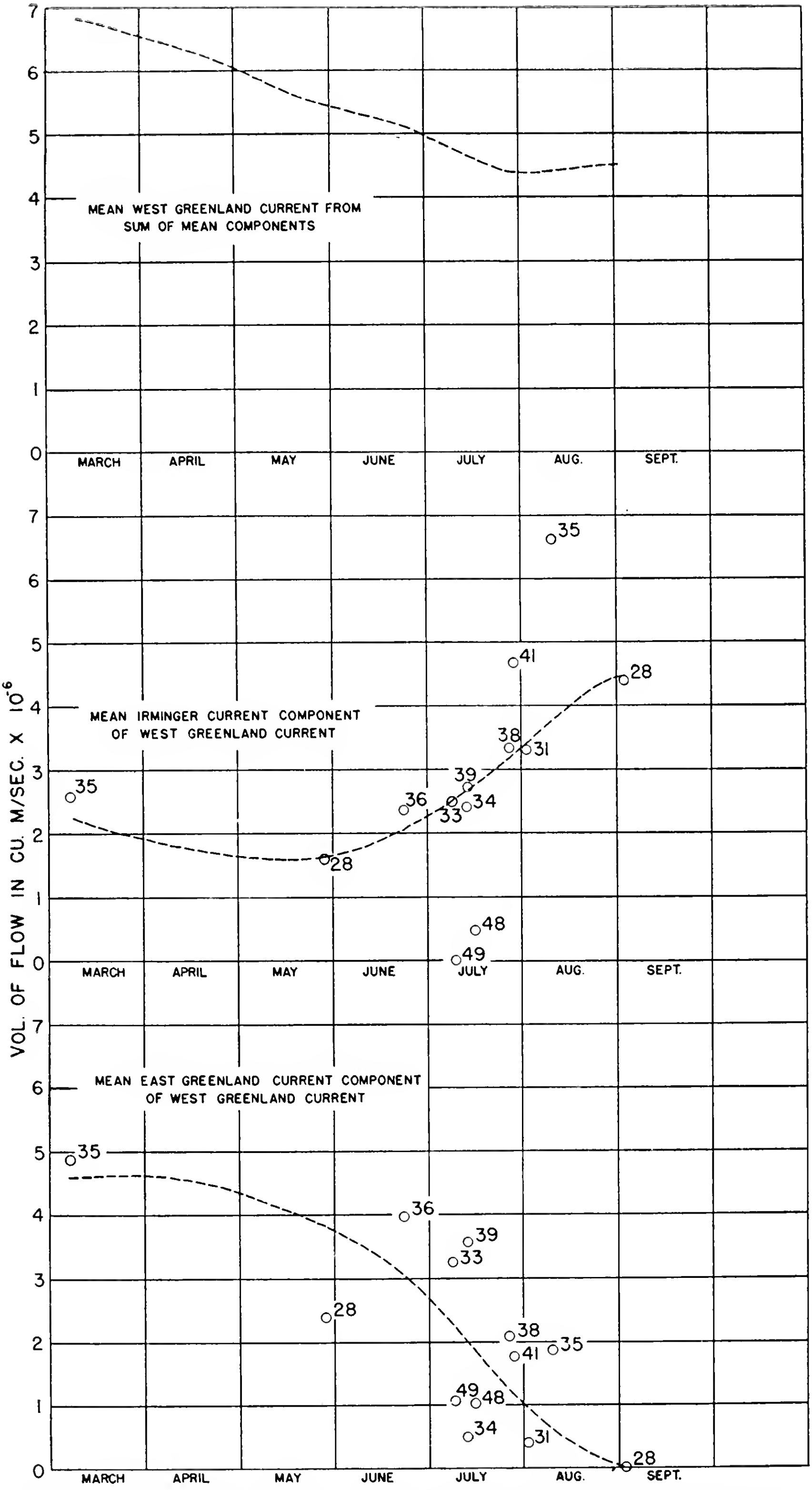

FIGURE 32.—Computed East Greenland Current and Irminger Current components of the West Greenland Current off Cape Farewell plotted against season. Numerals indicate last two digits of year of observation. Mean curves of seasonal variation of the two components are drawn through the plotted points. The mean curve of seasonal variation of the West Greenland Current is the sum of the component curves.

As a first approximation it was assumed that the mean temperature of the East Greenland Current was constant at 3.2° C., the value of the mean temperature of the water contributed to the West Greenland Current from the eastward in 1949 when the Irminger Current was almost completely absent; and that the mean temperature of the Irminger Current was constant at 5.5° C., the highest recorded value of the mean temperature of the West Greenland Current (September 1928). From the total volume of flow of the West Greenland Current and the total heat transport of that current the volume of flow of each of the components was then computed for the 13 occupations of the section which are available over the years from 1928 through 1949. The 13 values for each component were then plotted against time of year with the results shown in figure 32.

There appears to be a seasonal summertime increase in the volume of flow of the Irminger Current and a seasonal summertime decrease in the volume of flow of the East Greenland Current as they contribute to the West Greenland Current at Cape Farewell. The two curves representing these fluctuations and the curve, derived from their sum, representing the seasonal fluctuation in the West Greenland Current are approximations both because the mean temperatures of the two parent currents probably are not constant, as assumed; and because of the small number of points on which they are based. A southward shift of the northern boundary of the North Atlantic eddy, whether arising from a shift of the entire eddy or from a contraction of the eddy, would have the effect of reducing the Irminger Current. Such a reduction conceivably could take place with little or no noticeable change in the northward transport of salt or water-borne heat in the area east of Iceland. In such a circumstance as occurred in the summer of 1949, however, when practically no Irminger Current water reached Cape Farewell, a much greater reduction in the supply of water-borne heat to the Arctic could result.

A seasonal latitudinal shift of the northern boundary of Atlantic Current water in the Grand Banks sector of the North Atlantic eddy has been found and reported in Bulletin No. 31 of this series,[3] and has been correlated with the volume of flow of the Labrador Current and with the seasonal fluctuation in the different in sea level across the Gulf Stream at the Charleston-Bermuda section 13½ months earlier. If a time lag is involved between the Grand Banks sector and the Irminger Current, it might be expected to be of the same order of magnitude. Thus, if the surveys made in the Grand Banks region during a particular ice season show the boundary of Atlantic

[3] Soule, Floyd M., and C. A. Barnes, "International Ice Observation and Ice Patrol Service in the North Atlantic Ocean—Season of 1941." U. S. Coast Guard Bull. No. 31, pp. 15-24 (1950), Washington.

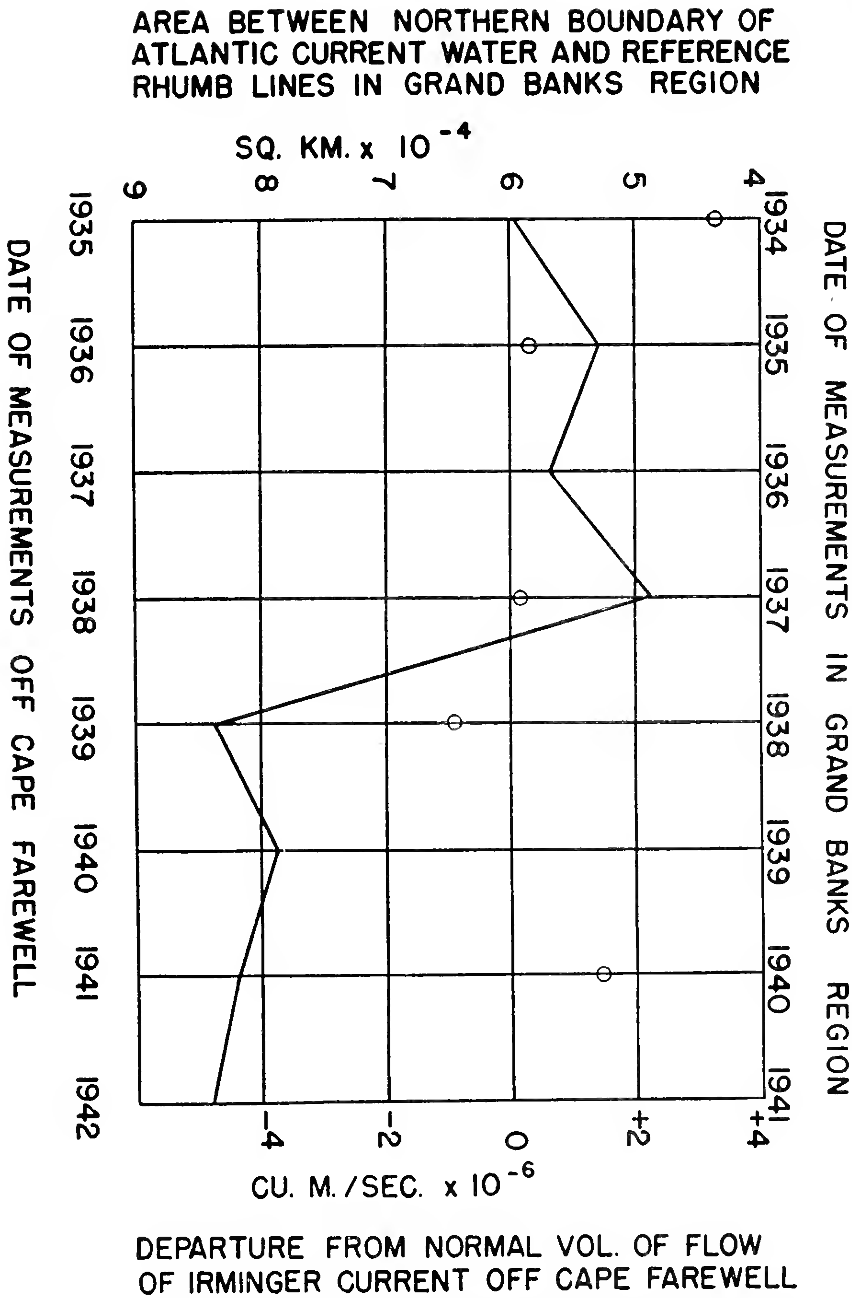

FIGURE 33.—Comparison of the latitudinal position of the northern boundary of Atlantic Current water in the Grand Banks region and the departure from normal volume of flow of the Irminger Current component of the West Greenland Current off Cape Farewell the following year.

Current water to be farther south than usual, one might expect that the Irminger Current contribution to the West Greenland Current at Cape Farewell would be smaller than usual the following summer. The few available data do not show such a simple relationship.

If the area between the boundary of Atlantic Current water and fixed reference rhumb lines in the Grand Banks region be taken as a measure of the southward retreat of the northern margin of the North Atlantic eddy, and if the curve for the Irminger Current water component of the West Greenland Current shown in figure 32 be taken as a normal curve, the southward retreat of the northern boundary of the North Atlantic eddy for the period 1934 to 1941 is represented by the solid curve in figure 33 and the departure from normal of the computed Irminger Current contribution to the West Greenland Current the following summer is represented by the five points plotted in figure 33. Only one other point is available and has been omitted from figure 33 because of the considerable interval of time. The single survey of 1948 gave an area of 7.80 and in 1949 the Irminger Current component of the West Greenland Current was computed to be 2.53 below normal. The units of area are 10,000 square kilometers and the Irminger Current units are 1 million cubic meters per second volume of flow. It would seem from the foregoing that other important modifying factors are interposed between the Grand Banks and the Irminger Current at Cape Farewell.

SUMMARY

1. Three dynamic topographic charts of the ice-patrol area in the Grand Banks region resulting from as many surveys form the basis of a discussion of the circulation in that area during the 1949 ice season.

2. The location of the northern boundary of Atlantic Current water found during one survey made in 1948 and two surveys in 1949 has been discussed with respect to fluctuation in the difference in sea level across the Gulf Stream at the Charleston-Bermuda section and the strength of the Labrador Current in the Grand Banks region.

3. The temperature-salinity relationships of the different water masses found in the Grand Banks region in 1949 have been discussed and compared with conditions found in previous years.

4. The subnormal volume of flow of the Labrador Current in the Grand Banks region, found consistently during the 1949 season, has been related to a deficiency in the contribution of the West Greenland Current to the Labrador Current.

5. The division of the Labrador Current, just north of the Grand Banks, into the branches which flow along the Avalon Peninsula

and along the eastern edge of the Grand Banks, has been discussed on the basis of two triangular surveys made 2 weeks apart.

6. The thermal conditions in the intermediate water of the Labrador Sea found in 1949 have been noted and compared to those found in earlier years.

7. The circulation in the Labrador Sea, Davis Strait, and southern Baffin Bay has been discussed on the basis of six sections across the major currents in these regions.

8. The almost total absence of the Irminger Current component of the West Greenland Current at Cape Farewell in 1949 has been discussed, and mean curves representing the approximate seasonal variation in the volume of flow of the East Greenland Current component and the Irminger Current component of the West Greenland Current deduced from earlier occupations of the Cape Farewell section.

Following are tabulated the data collected during the 1949 season and postseason cruises. The individual station headings give the station number, date, geographic position, depth of water, and the dynamic height of the sea surface used in the construction of the dynamic topographic charts shown in figures 14, 15, 16, 18, and 20 for which the dynamic heights have been referred to the 1,000-decibar surface, and for figure 23 for which the dynamic topography has been referred to the 1,500-decibar surface. The depths of water are uncorrected sonic soundings based on a sounding velocity of 800 fathoms per second. Where the depths of the scaled values are enclosed in parentheses, the data are based on extrapolated vertical distribution curves of temperature or salinity or both. Asterisks appearing before observed temperatures indicate that these temperatures were determined from the depth of reversal and the corrected reading of an unprotected thermometer. The symbol σ_t signifies 1,000(density−1) at atmospheric pressure and temperature t.

TABLES OF OCEANOGRAPHIC DATA

STATIONS OCCUPIED IN 1949

Station 3747; 5 Apr.; latitude 43°41.5′ N., longitude 51°38′ W.; depth 89 meters; dynamic height 971.034

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.76	33.11	0	2.76	33.11	26.42
24	2.79	33.17	25	2.80	33.17	26.47
48	2.89	33.19	50	2.95	33.25	26.52
72	3.74	33.83	(75)	3.80	33.89	26.94

Station 3748; 5 Apr.; latitude 43°34′ N., longitude 51°50′ W., depth 176 meters; dynamic height 971.022

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.84	33.41	0	3.84	33.41	26.56
25	3.90	33.45	25	3.90	33.45	26.59
50	3.96	33.53	50	3.96	33.53	26.65
75	3.59	33.87	75	3.59	33.87	26.95
100	3.61	34.05	100	3.61	34.05	27.09
150	2.38	34.16	150	2.38	34.16	27.29

Station 3749; 5 Apr.; latitude 43°31′ N., longitude 51°54′ W.; depth 348 meters; dynamic height 971.029

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.68	33.37	0	3.68	33.37	26.54
22	3.80	33.45	25	3.80	33.46	26.61
43	4.29	33.61	50	4.60	33.71	26.72
65	5.59	33.93	75	5.20	34.03	26.91
86	4.71	34.11	100	3.70	34.06	27.09
129	1.50	33.95	150	1.55	34.00	27.22
173	1.78	34.08	200	2.55	34.25	27.35
259	4.91	34.60	(300)	5.25	34.76	27.48

Station 3750; 5–6 Apr.; latitude 43°28′ N., longitude 52°01′ W.; depth 842 meters; dynamic height 971.059

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.06	33.71	0	5.06	33.71	26.67
23	5.10	33.71	25	5.10	33.71	26.67
46	5.07	33.70	50	5.10	33.71	26.67
69	5.31	33.83	75	5.30	33.79	26.70
92	5.32	34.57	100	5.45	33.94	26.81
137	7.22	33.75	150	7.00	34.58	27.11
183	6.45	34.67	200	6.25	34.70	27.30
275	5.24	34.65	300	5.00	34.68	27.45
228	6.00	34.76	400	4.45	34.84	27.63
408	4.43	31.84	600	4.20	34.88	27.70
632	4.16	34.89	(800)	4.00	34.90	27.73

Station 3751; 6 Apr.; latitude 43°21′ N., longitude 52°08′ W.; depth 1829 meters; dynamic height 971.058

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.28	33.97	0	6.28	33.97	26.72
24	6.31	33.93	25	6.30	33.97	26.72
48	6.34	33.97	50	6.35	33.97	26.72
71	6.41	33.99	75	6.40	33.99	26.72
95	6.24	33.98	100	6.20	33.98	26.74
143	6.12	34.53	150	6.15	34.58	27.22
191	6.51	31.72	200	6.45	34.73	27.30
286	5.64	34.77	300	5.50	34.78	27.46
392	4.73	34.81	400	4.70	34.81	27.58
589	4.50	34.91	600	4.50	34.92	27.69
789	4.33	34.98	800	4.30	34.98	27.75
987	3.95	34.92	1,000	3.95	34.92	27.75
1,482	3.73	34.97	------	------	------	------

Station 3752; 7 Apr.; latitude 43°07′ N., longitude 52°19′ W.; depth 2926 meters; dynamic height 971.066

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.40	33.80	0	5.40	33.80	26.70
27	5.48	33.81	25	5.45	33.81	26.71
53	5.85	33.90	50	5.80	33.89	26.72
79	6.19	33.96	75	6.10	33.95	26.74
105	7.05	34.44	100	6.85	34.36	26.96
159	6.97	34.68	150	7.05	34.66	27.17
211	4.60	34.41	200	4.95	34.47	27.29
316	5.43	34.75	300	5.35	34.71	27.43
400	4.82	34.75	400	4.82	34.75	27.52
600	4.00	34.85	600	4.00	34.85	27.69
801	4.07	34.91	800	4.05	34.91	27.73
1,007	3.99	34.92	1,000	4.00	34.92	27.75
1,531	3.77	34.97	------	------	------	------

Station 3753; 7 Apr.; latitude 42°53′ N., longitude 52°33′ W.; depth 3292 meters; dynamic height 971.080

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	9.92	34.83	0	9.95	34.83	26.85
24	9.99	34.89	25	10.00	34.89	26.88
49	10.14	34.91	50	10.15	34.91	26.88
73	10.28	34.85	75	10.30	34.96	26.89
98	10.84	35.10	100	10.90	35.12	26.91
147	11.69	35.45	150	11.50	35.45	27.05
195	7.39	34.73	200	7.20	34.73	27.19
293	5.89	34.71	300	5.85	34.71	27.36
364	5.36	34.74	400	5.30	34.77	27.48
550	5.12	34.92	600	4.75	34.91	27.65
740	3.87	34.87	800	3.90	34.93	27.76
877	3.92	35.01	1,000	3.90	35.00	27.82
1,590	3.80	34.96	------	------	------	------

Station 3754; 13 Apr.; latitude 42°02.5′ N., longitude 52°04′ W.; depth 4024 meters; dynamic height 971.182

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	13.57	35.69	0	13.57	35.69	26.83
23	13.57	35.69	25	13.55	35.69	26.83
46	13.58	35.70	50	13.60	35.70	26.83
69	13.59	35.70	75	13.60	35.70	26.83
92	13.59	35.70	100	13.60	35.70	26.83
138	13.59	35.69	150	13.45	35.66	26.83
184	12.44	35.51	200	12.00	35.49	26.99
276	------	------	300	9.50	35.22	27.23
285	10.00	35.26	400	7.00	35.00	27.44
430	6.54	34.97	600	5.20	34.98	27.66
576	5.35	34.98	800	4.55	34.97	27.73
737	4.67	34.98	1,000	4.15	34.96	27.76
1,165	3.83	34.94	------	------	------	------

Station 3755; 14 Apr.; latitude 41°59.5′ N., longitude 50°59′ W.; depth 3365 meters; dynamic height 971.126

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	12.63	35.46	0	12.63	35.46	26.85
27	12.59	35.46	25	12.60	35.45	26.84
53	12.55	35.44	50	12.55	35.44	26.84
80	12.55	35.44	75	12.55	35.44	26.84
105	12.61	35.45	100	12.60	35.45	26.84
159	12.54	35.50	150	12.60	35.50	26.88
212	11.20	35.35	200	11.50	35.38	27.00
317	8.56	35.13	300	9.00	35.16	27.27
360	7.51	35.06	400	6.60	34.99	27.48
562	3.39	34.66	600	3.40	34.70	27.63
780	3.44	34.87	800	3.60	34.87	27.75
998	3.87	34.90	1,000	3.85	34.91	27.75
1,423	3.77	34.94	------	------	------	------

STATIONS OCCUPIED IN 1949—Continued

Station 3756; 14 Apr.; latitude 42°21′ N., longitude 51°30′ W.; depth 2743 meters; dynamic height 971.069

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	5.24	33.61	0	5.24	33.61	26.57
29	5.33	33.66	25	5.30	33.65	26.59
58	7.35	34.21	50	6.70	34.05	26.73
87	10.29	34.79	75	9.40	34.57	26.74
115	7.08	34.43	100	8.50	34.64	26.93
173	6.40	34.65	150	6.60	34.56	27.15
230	6.08	34.71	200	6.25	34.68	27.29
345	5.40	34.81	300	5.65	34.78	27.45
406	4.51	34.75	400	4.55	34.75	27.55
603	4.29	34.89	600	4.30	34.89	27.69
795	4.18	34.92	800	4.15	34.92	27.73
1,013	3.86	34.91	1,000	3.85	34.91	27.75
1,592	3.62	34.94	-------	-------	-------	-------

Station 3757; 14 Apr.; latitude 42°39′ N., longitude 50° 59′ W., depth 1661 meters; dynamic height 971.042

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	4.77	33.56	0	4.77	33.56	26.59
22	4.83	33.58	25	4.85	33.58	26.60
44	4.91	33.64	50	4.50	33.63	26.67
66	2.83	33.57	75	2.65	33.61	26.83
88	2.58	33.73	100	3.15	33.92	27.03
132	5.04	34.39	150	5.20	34.47	27.26
176	5.39	34.53	200	5.35	34.58	27.33
264	5.16	34.70	300	4.55	34.68	27.50
293	4.63	34.69	400	3.65	34.65	27.56
455	3.47	34.65	600	3.70	34.83	27.71
629	3.74	34.85	800	4.00	34.89	27.72
789	3.99	34.89	1,000	3.90	34.91	27.75
1,197	3.79	34.93	-------	-------	-------	-------

Station 3758; 14 Apr.; latitude 42°50′ N., longitude 50°45′ W.; depth 910 meters; dynamic height 971.288

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	3.31	33.41	0	3.31	33.41	26.61
23	2.98	33.48	25	2.95	33.48	26.70
45	2.88	33.55	50	2.50	33.57	26.81
68	2.44	33.64	75	2.50	33.69	26.90
90	2.83	33.78	100	3.30	33.91	27.01
135	4.81	34.31	150	4.25	34.26	27.19
180	2.58	34.14	200	2.65	34.21	27.31
270	3.33	34.45	300	3.65	34.56	27.49
325	3.96	34.64	400	4.05	34.75	27.60
509	4.06	34.82	600	4.00	34.86	27.70
708	3.88	34.88	800	3.85	34.88	27.73
909	3.81	34.875	(1,000)	3.80	34.87	27.73

Station 3759; 14 Apr.; latitude 42°53′ N., longitude 50°44′ W.; depth 443 meters; dynamic height 971.030

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	1.82	33.38	0	1.82	33.38	26.71
21	1.55	33.44	25	1.50	33.45	26.79
43	1.15	33.48	50	1.05	33.50	26.86
64	0.87	33.55	75	0.70	33.57	26.91
86	0.63	33.59	100	0.75	33.68	27.03
129	1.11	33.86	150	0.85	33.90	27.19
172	0.57	33.93	200	0.85	34.01	27.28
257	1.41	34.16	300	1.85	34.27	27.42
310	1.98	34.30	400	3.00	34.57	27.57
427	3.36	34.65	-------	-------	-------	-------

Station 3760; 14 Apr.; latitude 43°03.5′ N., longitude 50°38′ W.; depth 152 meters; dynamic height 971.034

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	1.03	33.31	0	1.03	33.32	26.72
21	0.99	33.33	25	0.95	33.34	26.73
42	0.57	33.41	50	0.55	33.47	26.87
64	0.59	33.60	75	0.65	33.67	27.02
85	0.72	33.71	100	0.85	33.75	27.07
127	1.13	33.80	(150)	1.35	33.82	27.10

Station 3761; 14 Apr.; latitude 43°06.5′ N. longitude 50°34′ W.; depth 89 meters; dynamic height 971.034

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	3.00	33.37	0	3.00	33.37	26.61
23	2.90	33.44	25	2.85	33.45	26.68
46	2.02	33.58	50	1.90	33.61	26.90
69	1.35	33.69	(75)	1.15	33.72	27.03

Station 3762; 15 Apr.; latitude 43°20′ N., longitude 50°15′ W.; depth 69 meters; dynamic height 971.029

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	2.94	33.30	0	2.94	33.30	26.55
24	2.73	33.39	25	2.70	33.39	26.65
49	2.58	33.41	50	2.55	33.41	26.68

Station 3763; 15 Apr.; latitude 43°00′ N., longitude 50°17′ W.; depth 92 meters; dynamic height 971.029

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	2.63	33.40	0	2.63	33.40	26.66
24	1.93	33.47	25	1.90	33.47	26.79
49	1.19	33.56	50	1.15	33.56	26.90
73	1.07	33.60	75	1.05	33.60	26.94

Station 3764; 15 Apr.; latitude 42°54′ N., longitude 50°17′ W.; depth 361 meters; dynamic height 971.009

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	1.99	33.43	0	1.99	33.43	26.75
24	1.61	33.46	25	1.60	33.46	26.79
47	0.75	33.61	50	0.70	33.63	26.99
71	0.63	33.72	75	0.60	33.73	27.07
94	0.61	33.77	100	0.65	33.79	27.11
141	1.02	33.94	150	1.02	33.97	27.24
188	1.27	34.07	200	1.35	34.11	27.33
282	1.98	34.29	300	2.05	34.33	27.46
380	2.48	34.47	(400)	2.55	34.51	27.56

Station 3765; 15 Apr.; latitude, 42°44′ N., longitude 50°14′ W.; depth 1207 meters; dynamic height 970.979

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	0.75	33.36	0	0.75	33.36	26.76
27	0.62	33.43	25	0.65	33.43	26.83
53	0.48	33.48	50	0.45	33.54	26.92
80	0.80	33.79	75	0.75	33.72	27.06
105	0.93	33.96	100	0.90	33.94	27.22
159	1.45	-------	150	1.35	34.11	27.33
212	2.29	34.33	200	2.10	34.27	27.40
317	2.80	34.73	300	2.75	34.61	27.62
350	2.90	34.61	400	3.05	34.73	27.69
537	3.71	34.95	600	3.75	34.82	27.69
734	3.82	34.835	800	3.80	34.85	27.71
936	3.70	34.875	1,000	3.70	34.88	27.73
1,145	3.62	34.90	-------	-------	-------	-------

STATIONS OCCUPIED IN 1949—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t

Station 3766; 15 Apr.; latitude 42°19′ N., longitude 50°08′ W.; depth 2963 meters; dynamic height 970.947

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.76	33.32	0	1.76	33.32	26.67
22	7.44	34.52	25	7.65	34.53	26.98
43	7.97	34.59	50	7.90	34.59	26.99
66	7.52	34.57	75	5.60	34.42	27.17
87	3.71	34.23	100	3.70	34.30	27.28
131	3.79	34.52	150	3.75	34.53	27.46
217	------	34.57	200	3.60	34.55	27.49
261	4.79	34.75	300	4.15	34.75	27.59
352	3.52	34.76	400	3.60	34.79	27.68
530	3.80	34.88	600	3.75	34.88	27.74
714	3.66	34.88	800	3.65	34.89	27.75
912	3.65	34.90	1,000	3.65	34.90	27.76
1,119	3.63	------	------	------	------	------

Station 3767; 15 Apr.; latitude 41°55′ N., longitude 50°04′ W. depth 3448 meters; dynamic height 971.042

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.76	33.50	0	3.77	33.50	26.64
27	------	------	25	6.50	33.88	26.63
52	9.65	------	50	9.55	34.49	26.65
79	10.30	34.80	75	10.25	34.75	26.73
105	10.08	34.99	100	10.15	34.96	26.91
158	8.96	35.03	150	9.10	35.03	27.15
210	8.06	34.99	200	8.20	35.00	27.26
289	5.85	34.89	300	5.40	34.87	27.55
411	2.94	34.62	400	3.35	34.68	27.62
600	4.06	34.87	600	4.05	34.87	27.70
775	4.15	34.95	800	4.15	34.96	27.76
960	4.18	34.93	(1,000)	4.15	34.98	27.78

Station 3768; 16 Apr.; latitude 41°33.5′ N., longitude 50°03′ W. depth 3841 meters; dynamic height 971.176

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	13.77	35.59	0	13.77	35.59	26.71
23	13.75	35.60	25	13.75	35.60	26.72
46	13.71	35.60	50	13.70	35.60	26.73
69	13.66	35.59	75	13.70	35.60	26.73
92	13.79	35.63	100	13.80	35.64	26.74
139	13.80	35.66	150	13.55	35.64	26.79
184	12.62	35.54	200	12.25	35.49	26.94
276	10.64	35.28	300	10.22	35.26	27.14
300	10.22	35.28	400	8.35	35.13	27.34
455	7.37	35.07	600	5.35	34.97	27.63
619	5.21	34.97	800	5.05	35.01	27.70
789	5.07	35.01	1,000	4.05	35.07	27.86
973	4.18	35.06	------	------	------	------

Station 3769; 16 Apr.; latitude 41°56.5′ N., longitude 49°24′ W., depth 3017 meters; dynamic height 970.956

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.47	33.67	0	4.47	33.67	26.71
28	4.45	33.69	25	4.45	33.68	26.72
55	4.94	34.12	50	4.85	34.04	26.95
83	5.71	34.43	75	5.50	34.38	27.15
110	4.39	34.38	100	4.90	34.40	27.23
166	3.61	34.45	150	3.70	34.42	27.38
221	5.00	34.75	200	4.45	34.66	27.49
331	4.83	34.86	300	4.85	34.86	27.60
332	4.78	34.92	400	4.65	34.94	27.69
510	4.40	34.96	600	4.20	34.95	27.75
699	4.06	34.94	800	3.95	34.94	27.76
903	3.85	34.94	1,000	3.80	34.94	27.78
1,117	3.73	34.94	------	------	------	------

Station 3770; 16 Apr.; latitude 41°32′ N., longitude 48°00′ W., depth 3329 meters; dynamic height 970.931

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.23	33.46	0	3.23	33.46	26.66
24	2.89	33.72	25	2.90	33.73	26.91
47	2.60	33.89	50	2.60	33.91	27.07
71	2.41	34.03	75	2.35	34.05	27.20
94	1.87	34.11	100	2.05	34.17	27.33
141	5.78	34.84	150	5.75	34.85	27.49
188	5.28	34.87	200	5.15	34.87	27.58
282	4.39	34.84	300	4.35	34.85	27.65
426	4.52	34.93	400	4.50	34.92	27.69
639	4.10	34.92	600	4.20	34.92	27.73
854	3.65	34.91	800	3.75	34.91	27.76
1,101	3.58	34.91	1,000	3.60	34.91	27.78
1,293	3.49	34.91	------	------	------	------

Station 3771; 16 Apr.; latitude 41°58.5′ N., longitude 47°57′ W., depth 3768 meters; dynamic height 970.007

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	9.11	34.77	0	9.11	34.77	26.94
28	9.21	34.78	25	9.20	34.78	26.94
55	9.09	34.78	50	9.10	34.78	26.95
82	9.12	34.91	75	9.10	34.89	27.03
109	8.50	34.89	100	8.70	34.90	27.11
165	6.97	34.74	150	7.45	34.77	27.20
219	7.29	34.93	200	7.20	34.87	27.31
328	5.61	34.91	300	6.00	34.92	27.51
442	4.93	34.96	400	5.10	34.94	27.63
654	4.63	35.01	600	4.65	35.00	27.74
862	4.21	34.96	800	4.40	34.93	27.75
1,102	3.82	34.93	1,000	3.95	34.94	27.76
1,307	3.72	34.96	------	------	------	------

Station 3772; 17 Apr.; latitude 42°19′ N., longitude 48°33′ W.; depth 3310 meters; dynamic height 971.055

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	11.38	35.47	0	11.38	35.47	27.10
18	11.36	35.47	25	11.35	35.46	27.09
35	11.37	35.455	50	11.35	35.46	27.09
52	11.37	35.46	75	11.35	35.46	27.09
69	11.37	35.46	100	11.35	35.46	27.09
105	11.32	35.465	150	11.05	35.43	27.12
139	11.33	35.475	200	9.50	35.21	27.22
209	8.69	35.07	300	6.95	34.93	27.40
264	8.66	35.04	400	5.50	34.80	27.48
402	5.48	34.80	600	4.60	34.90	27.66
546	5.62	34.87	800	4.25	34.95	27.75
693	4.40	34.95	(1,000)	4.05	34.96	27.77
846	4.19	34.955	------	------	------	------

Station 3773; 17 Apr.; latitude 42°43′ N., longitude 49°08′ W.; depth 2469 meters; dynamic height 970.935

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.79	33.91	0	4.79	33.91	26.86
23	4.92	34.03	25	4.95	34.06	26.96
46	6.11	34.36	50	6.20	34.41	27.08
69	6.46	34.55	75	6.35	34.56	27.18
92	5.96	34.58	100	5.85	34.58	27.27
139	5.40	34.61	150	5.35	34.63	27.37
185	5.29	34.77	200	5.25	34.81	27.52
277	4.92	34.91	300	4.85	34.93	27.66
402	4.68	34.97	400	4.65	34.97	27.72
609	3.87	34.91	600	3.90	34.91	27.75
817	4.05	34.95	800	4.05	34.95	27.76
1,078	3.80	34.94	1,000	3.90	34.94	27.77
1,277	3.71	34.95	------	------	------	------

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t

Station 3774; 17 Apr.; latitude 43°23′ N., longitude 48°52′ W.; depth 1737 meters; dynamic height 970.905

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.88	33.96	0	4.88	33.96	26.89
22	4.77	33.97	25	4.80	33.97	26.91
43	4.88	34.00	50	4.55	34.02	26.97
65	3.81	34.10	75	3.95	34.23	27.21
85	4.05	34.35	100	4.00	34.42	27.35
129	3.90	34.53	150	3.70	34.60	27.52
172	2.54	34.66	200	3.65	34.72	27.62
257	3.96	34.80	300	4.00	34.84	27.68
353	4.05	34.87	400	4.00	34.89	27.72
534	3.76	34.91	600	3.70	34.91	27.77
718	3.62	34.90	800	3.60	34.90	27.77
940	3.55	34.91	1,000	3.55	34.91	27.78
1,414	3.57	34.95				

Station 3775; 17-18 Apr.; latitude 43°04′ N., longitude 47°58′ W.; depth 3383 meters; dynamic height 970.939

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.68	33.93	0	4.68	33.93	26.89
31	5.33	34.10	25	5.20	34.06	26.93
61	6.53	34.50	50	6.10	34.38	27.08
92	4.26	34.31	75	5.50	34.41	27.17
122	4.22	34.42	100	4.20	34.34	27.26
183	3.30	34.49	150	3.80	34.45	27.39
244	3.28	34.62	200	3.30	34.52	27.50
366	4.34	34.89	300	3.70	34.75	27.64
429	4.18	34.88	400	4.25	34.89	27.69
635	4.06	34.94	600	4.05	34.93	27.75
834	4.13	34.93	800	3.95	34.93	27.76
1,062	3.71	34.93	1,000	3.85	34.93	27.77
1,670	3.46	34.93				

Station 3776; 18 Apr.; latitude 42°58′ N., longitude 47°31′ W.; depth 3493 meters; dynamic height 971.061

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	13.54	35.76	0	13.54	35.76	26.89
28	13.50	35.76	25	13.55	35.76	26.89
54	13.53	35.765	50	13.50	35.76	26.90
82	13.50	-------	75	13.50	35.76	26.90
108	13.01	35.69	100	13.20	35.71	26.92
164	11.33	35.45	150	11.85	35.52	27.04
218	9.36	35.16	200	9.95	35.26	27.19
326	6.47	34.98	300	6.95	35.01	27.46
407	5.79	34.92	400	5.85	34.92	27.53
611	4.47	34.88	600	4.55	34.88	27.66
817	3.59	34.89	800	3.60	34.89	27.76
1,023	3.57	34.97	1,000	3.55	34.96	27.82
1,544	3.55	34.98				

Station 3777; 18 Apr.; latitude 42°39.5′ N., longitude 46°52′ W.; depth 4024 meters; dynamic height 970.953

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.71	33.94	0	6.71	33.94	26.64
27	6.10	33.98	25	6.20	33.98	26.75
53	4.02	34.03	50	4.25	34.02	27.01
80	3.56	34.24	75	3.60	34.20	27.21
106	3.41	34.33	100	3.40	34.31	27.32
160	5.84	34.83	150	5.55	34.74	27.42
213	5.55	34.88	200	5.60	34.87	27.52
319	5.36	34.96	300	5.40	34.95	27.61
398	5.12	34.99	400	5.10	34.99	27.67
598	4.53	34.98	600	4.55	34.98	27.74
799	3.97	34.96	800	3.95	34.95	27.77
1,002	3.91	34.93	1,000	3.90	34.93	27.77
1,513	3.54	34.93				

Station 3778; 18 Apr.; latitude 43°00′ N., longitude 46°34′ W.; depth 4152 meters; dynamic height 971.038

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	9.90	34.71	0	9.90	34.71	26.76
25	11.39	35.13	25	11.39	35.13	26.83
50	11.35	35.14	50	11.35	35.14	26.84
75	12.17	35.39	75	12.17	35.39	26.88
100	8.27	34.65	100	8.27	34.65	26.98
150	3.53	34.07	150	3.53	34.07	27.12
200	3.61	34.22	200	3.61	34.22	27.23
299	5.64	34.84	300	5.65	34.84	27.49
410	4.66	34.83	400	4.70	34.83	27.60
616	4.76	35.00	600	4.75	34.99	27.71
826	4.17	34.96	800	4.25	34.97	27.76
1,039	3.85	34.935	1,000	3.90	34.94	27.77
1,573	3.58	34.945				

Station 3779; 18-19 Apr.; latitude 43°20′ N., longitude 46°12′ W.; depth 4572 meters; dynamic height 971.046

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	7.69	34.14	0	7.69	34.14	26.66
27	5.00	33.81	25	5.05	33.85	26.78
53	5.20	33.98	50	5.15	33.94	26.84
80	10.22	35.08	75	10.00	33.93	26.92
106	7.60	34.65	100	8.00	34.73	27.09
159	9.09	35.11	150	9.00	35.05	27.18
212	3.73	34.27	200	4.80	34.42	27.26
318	7.43	35.11	300	6.90	35.02	27.47
425	4.63	34.80	400	5.20	34.86	27.56
633	4.63	34.965	600	4.60	34.95	27.70
842	4.24	34.965	800	4.35	34.97	27.75
1,054	3.98	34.935	1,000	4.05	34.94	27.75
1,590	3.62	34.94				

Station 3780; 19 Apr.; latitude 43°32.5′ N., longitude 46°43′ W.; depth 4280 meters; dynamic height 971.184

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	12.84	35.62	0	12.84	35.62	26.93
25	12.42	35.64	25	12.82	35.64	26.96
48	12.76	35.35	50	12.75	35.64	26.96
73	12.83	35.65	75	12.80	35.65	26.96
96	12.84	35.66	100	12.85	35.66	26.96
145	12.86	35.67	150	12.90	35.67	26.95
194	12.87	35.67	200	12.85	35.66	26.96
290	10.94	35.37	300	10.65	35.32	27.11
366	8.59	34.01	400	7.40	34.90	27.30
549	4.27	34.63	600	4.40	34.74	27.55
688	4.65	34.93	800	4.40	34.95	27.72
869	4.26	34.95	1,000	4.15	34.95	27.75
1,311	3.82	34.95				

Station 3781; 19 Apr.; latitude 43°41′ N., longitude 47°26′ W.; depth 4021 meters; dynamic height 971.193

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	12.75	35.59	0	12.75	35.59	26.92
27	12.71	35.59	25	12.70	35.59	26.93
53	12.62	35.59	50	12.65	35.59	26.94
80	12.91	35.65	75	12.85	35.64	26.94
106	13.10	35.72	100	13.05	35.70	26.94
160	13.07	35.71	150	13.10	35.71	26.94
213	12.99	35.69	200	13.00	35.70	26.95
319	9.86	35.13	300	10.30	35.22	27.09
380	8.78	35.07	400	8.35	35.05	27.28
573	5.35	34.86	600	5.20	34.87	27.57
769	4.70	34.96	800	4.60	34.96	27.71
968	4.04	34.93	1,000	3.95	34.93	27.76
1,490	3.61	34.91				

STATIONS OCCUPIED IN 1949—Continued

Station 3782; 19 Apr.; latitude 43°51′ N., longitude 48°01′ W.; depth 3695 meters; dynamic height 971.091

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	13.51	35.75	0	13.51	35.75	26.89
24	13.54	35.75	25	13.50	35.75	26.89
48	13.51	35.76	50	13.50	35.76	26.90
72	13.54	35.76	75	13.50	35.76	26.90
96	13.50	35.75	100	13.45	35.75	26.90
144	12.72	35.66	150	12.65	35.65	26.98
193	11.78	35.51	200	11.55	35.48	27.07
289	8.16	35.02	300	7.65	34.99	27.34
385	5.74	34.88	400	5.60	34.88	27.53
571	4.83	34.96	600	4.75	34.96	27.69
753	4.32	34.96	800	4.25	34.96	27.75
949	4.01	34.95	1,000	4.00	34.95	27.77
1,443	3.86	34.94	-------	-------	-------	-------

Station 3783; 19 Apr.; latitude 44°02.5′ N., longitude 48°32′ W.; depth 3054 meters; dynamic height 970.916

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.09	33.75	0	4.09	33.75	26.81
26	4.70	34.05	25	4.70	34.05	26.98
52	4.32	34.13	50	4.35	34.12	27.07
78	4.00	34.30	75	4.00	34.29	27.24
104	4.00	34.41	100	4.00	34.39	27.32
156	4.04	34.61	150	4.05	34.59	27.47
208	4.33	34.79	200	4.25	34.77	27.60
312	4.57	34.93	300	4.55	34.92	27.69
386	4.39	34.93	400	4.35	34.93	27.72
585	-------	34.93	600	4.00	34.93	27.76
792	3.77	34.91	800	3.80	34.91	27.76
998	3.62	34.89	1,000	3.60	34.89	27.76
1,532	3.45	34.93	-------	-------	-------	-------

Station 3784; 19 Apr.; latitude 44°05′ N., longitude 48°50′ W., depth 1444 meters; dynamic height 970.938

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.41	33.19	0	0.41	33.19	26.65
27	0.13	33.21	25	0.15	33.21	26.68
52	0.32	33.64	50	0.30	33.58	26.97
79	3.54	34.10	75	3.30	34.09	27.15
104	1.10	34.05	100	1.35	34.06	27.29
157	2.00	34.33	150	1.90	34.29	27.43
210	4.43	34.75	200	4.15	34.68	27.54
314	3.37	34.73	300	3.50	34.73	27.65
399	4.46	34.94	400	4.45	34.94	27.71
606	3.82	34.905	600	3.85	34.91	27.75
822	3.64	34.95	800	3.65	34.90	27.76
1,030	3.59	34.98	1,000	3.60	34.90	27.77
1,376	3.45	34.90	-------	-------	-------	-------

Station 3785; 20 Apr.; latitude 44°07′ N., longitude 48°59′ W., depth 443 meters; dynamic height 970.962

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.18	33.12	0	0.18	33.12	26.60
25	−0.45	33.17	25	−0.45	33.17	26.67
49	−0.91	33.48	50	−0.90	33.49	26.95
74	−0.12	33.66	75	−0.10	33.66	27.05
98	0.76	33.86	100	0.80	33.87	27.17
148	1.70	34.19	150	1.70	34.20	27.37
197	1.99	34.35	200	2.00	34.36	27.48
295	2.85	34.61	300	3.05	34.62	27.60
263	2.67	34.55	(400)	3.55	34.79	27.68
391	4.46	34.78	-------	-------	-------	-------

Station 3786; 20 Apr.; latitude 44°10′ N., longitude 49°08′ W. depth 150 meters; dynamic height 970.991

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.08	33.15	0	0.08	33.15	26.63
25	0.06	33.27	25	0.06	33.27	26.72
50	−0.49	33.43	50	−0.49	33.42	26.88
75	−0.35	33.55	75	−0.35	33.55	26.96
100	−0.18	33.63	100	−0.18	33.63	27.03
(130)	0.02	33.68	(150)	0.05	33.70	27.07

Station 3787; 20 Apr.; latitude 44°11′ N., longitude 49°12′ W., depth 87 meters; dynamic height 970.985

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.36	33.25	0	0.36	33.25	26.69
20	−0.15	33.27	25	−0.25	33.32	26.77
41	−0.51	33.45	50	−0.30	33.52	26.94
61	−0.01	33.61	(75)	0.30	33.69	27.04

Station 3788; 20 Apr.; latitude 44°13.5′ N., longitude 49°24′ W., depth 46 meters; dynamic height 970.993

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.13	33.35	0	2.13	33.35	26.66
25	2.09	33.37	25	2.09	33.37	26.67
35	1.66	33.39	-------	-------	-------	-------

Station 3789; 20 Apr.; latitude 44°59′ N., longitude 49°27′ W., depth 62 meters; dynamic height 971.023

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.16	33.30	0	1.16	33.30	26.68
25	0.61	33.31	25	0.61	33.31	26.72
48	0.56	33.30	(50)	0.55	33.31	26.72

Station 3790; 20 Apr.; latitude 44°58′ N., longitude 49°10′ W., depth 96 meters; dynamic height 971.023

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.75	33.11	0	0.75	33.11	26.55
24	0.04	33.15	25	0.05	33.16	26.64
49	−0.69	33.42	50	−0.70	33.42	26.88
73	−0.61	33.45	(75)	−0.60	33.45	26.90

Station 3791; 20 Apr.; latitude 44°58′ N., longitude 48°58′ W., depth 572 meters; dynamic height 971.003

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.66	33.04	0	0.66	33.04	26.50
25	−0.38	33.08	25	−0.38	33.08	26.59
49	−1.31	33.33	50	−1.30	33.35	26.84
74	−0.54	33.54	75	−0.55	33.54	26.96
98	−0.27	33.63	100	−0.22	33.64	27.03
147	0.87	33.88	150	0.90	33.89	27.17
197	1.84	34.18	200	1.90	34.20	27.35
295	2.51	34.51	300	2.55	34.52	27.56
367	3.16	34.71	400	3.30	34.68	27.62
571	3.63	34.83	600	3.65	34.84	27.70

Table of Oceanographic Data—Continued

STATIONS OCCUPIED IN 1949—Continued

Station 3792; 20 Apr.; latitude 44°54.5′ N., longitude 48°45′ W., depth 1646 meters; dynamic height 970.926

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	1.98	33.51	0	1.98	33.51	26.81
23	1.11	33.52	25	1.20	33.56	26.90
47	3.74	34.01	50	4.00	34.07	27.07
70	5.22	34.34	75	5.20	34.38	27.19
93	4.93	34.49	100	4.45	34.47	27.34
140	1.83	34.27	150	1.90	34.31	27.45
186	2.52	34.50	200	2.85	34.57	27.58
279	4.67	34.87	300	4.65	34.92	27.68
364	4.47	34.91	400	4.35	34.92	27.71
546	4.08	34.93	600	4.00	34.88	27.72
728	3.85	34.91	800	3.80	34.91	27.76
910	3.73	34.925	1,000	3.70	34.92	27.78
1,364	3.55	34.91				

Station 3793; 20 Apr.; latitude 44°53′ N., longitude 48°28′ W., depth 1939 meters; dynamic height 970.928

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	6.57	34.43	0	6.57	34.43	27.06
24	7.01	34.57	25	7.00	34.57	27.10
47	6.99	34.57	50	7.00	34.57	27.10
71	6.74	34.565	75	6.75	34.57	27.14
94	6.80	34.59	100	6.70	34.59	27.16
141	5.36	34.63	150	5.40	34.66	27.38
188	5.69	34.81	200	5.55	34.83	27.50
282	4.65	34.90	300	4.50	34.90	27.67
351	4.24	34.90	400	4.10	34.90	27.72
516	3.90	34.91	600	3.80	34.90	27.75
677	3.71	34.89	800	3.65	34.90	27.76
879	3.63	34.91	1,000	3.60	34.91	27.78
1,441	3.51	34.92				

Station 3794; 21 Apr.; latitude 44°50′ N., longitude 48°00′ W., depth 3136 meters; dynamic height 970.894

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	5.48	34.18	0	5.48	34.18	27.00
25	5.63	34.25	25	5.60	34.25	27.03
51	4.87	34.33	50	4.90	34.32	27.17
77	4.32	34.45	75	4.35	34.43	27.32
102	4.43	34.56	100	4.40	34.55	27.41
154	3.91	34.63	150	3.95	34.62	27.51
205	4.20	34.80	200	4.15	34.78	27.62
307	4.44	34.91	300	4.40	34.91	27.69
355	4.15	34.91	400	4.15	34.92	27.73
542	4.15	34.95	600	4.10	34.95	27.76
736	3.93	34.95	800	3.85	34.94	27.77
931	3.76	34.93	1,000	3.70	34.93	27.79
1,440	3.51	34.94				

Station 3795; 21 Apr.; latitude 44°47′ N., longitude 47°17′ W., depth 3731 meters; dynamic height 970.962

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	5.93	34.02	0	5.93	34.02	26.82
23	5.76	34.01	25	5.80	34.01	26.82
44	6.73	34.29	50	6.95	34.35	26.93
67	7.40	34.47	75	7.20	34.50	27.02
88	6.85	34.53	100	6.50	34.54	27.14
133	5.65	34.54	150	4.90	34.53	27.34
178	3.70	34.43	200	3.85	34.57	27.48
266	4.57	34.83	300	4.60	34.89	27.65
179	3.68	34.56	400	4.35	34.91	27.70
281	4.65	34.87	600	4.10	34.91	27.73
392	4.38	34.91	800	3.95	34.92	27.75
549	4.17	------	1,000	3.75	34.92	27.77
1,046	3.70	34.92				

Station 3796; 21 Apr.; latitude 44°42′ N., longitude 46°38′ W., depth 3658 meters; dynamic height 971.040

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	12.01	35.39	0	12.01	35.39	26.91
25	11.98	35.37	25	11.98	35.37	26.90
50	10.96	35.13	50	10.96	35.13	26.91
75	10.05	35.01	75	10.05	35.01	26.97
100	9.73	34.94	100	9.73	34.94	26.97
150	10.58	35.34	150	10.58	35.34	27.13
200	8.45	35.01	200	8.45	35.01	27.23
300	6.59	34.93	300	6.59	34.93	27.44
282	6.99	34.97	400	5.30	34.90	27.58
404	5.27	34.90	600	4.55	34.96	27.72
516	4.73	34.95	800	4.15	34.95	27.75
664	4.44	34.96	1,000	3.75	34.93	27.78
1,069	3.69	34.92				

Station 3797; 21 Apr.; latitude 44°29.5′ N., longitude 45°53′ W., depth 3914 meters; dynamic height 970.990

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	8.59	34.46	0	8.59	34.46	26.78
21	8.41	34.45	25	8.30	34.44	26.81
41	7.63	34.34	50	7.95	34.43	26.86
62	8.46	34.61	75	5.90	34.27	27.01
82	4.57	34.13	100	4.70	34.20	27.10
123	5.05	34.40	150	6.65	34.79	27.32
161	7.43	34.95	200	7.20	34.98	27.40
246	6.75	34.99	300	6.00	34.96	27.54
317	5.79	34.95	400	4.90	34.92	27.65
473	4.46	34.92	600	4.20	34.93	27.74
628	4.15	34.93	800	4.00	34.94	27.76
810	4.00	34.94	1,000	3.85	34.94	27.77
1,308	3.66	34.93				

Station 3798; 21 Apr.; latitude 44°25′ N., longitude 45°16′ W., depth 3992 meters; dynamic height 971.152

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	7.14	33.86	0	7.14	33.86	26.53
27	13.71	35.57	25	13.65	35.43	26.62
53	13.67	35.60	50	13.70	35.60	26.73
80	13.69	35.61	75	13.70	35.61	26.74
106	-------	35.43	100	13.20	35.47	26.74
160	11.95	35.39	150	12.20	35.40	26.88
212	11.51	35.44	200	11.60	35.43	27.02
318	8.73	35.12	300	8.95	35.13	27.25
319	8.09	35.01	400	6.05	34.83	27.44
461	4.43	34.69	600	5.20	34.99	27.66
597	5.20	34.99	800	4.45	34.98	27.75
770	4.55	34.985	1,000	4.10	34.97	27.78
1,246	3.86	34.95				

Station 3799; 22 Apr.; latitude 44°49′ N., longitude 45°10′ W.; depth 3659 meters; dynamic height 971.093

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/oo	Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	9.97	34.72	0	9.97	34.72	26.77
27	10.56	34.87	25	10.50	34.85	26.77
53	13.25	35.58	50	13.10	35.54	26.81
80	12.25	35.39	75	12.45	35.42	26.85
106	11.22	35.21	100	11.45	35.25	26.91
160	8.33	34.69	150	8.80	34.75	26.97
213	10.21	35.23	200	9.75	35.11	27.10
319	7.86	35.05	300	8.25	35.08	27.32
372	6.70	34.95	400	6.20	34.93	27.50
551	4.26	34.88	600	4.05	34.88	27.71
728	3.83	34.89	800	3.90	34.91	27.75
910	4.01	34.955	(1,000)	3.90	34.96	27.79

Station 3800; 22 Apr.; latitude 45°20.5′ N., longitude 45°02′ W.; depth 3841 meters; dynamic height 971.031

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	10.13	34.81	0	10.13	34.81	26.81
25	10.85	35.06	25	10.85	35.06	26.87
48	10.67	35.03	50	10.70	35.06	26.90
73	12.13	35.32	75	11.70	35.34	26.93
96	12.15	35.49	100	12.05	35.47	26.97
145	10.37	35.18	150	10.15	35.15	27.06
194	8.01	34.90	200	7.85	34.89	27.23
290	6.31	34.89	300	5.65	34.82	27.48
256	6.24	34.77	400	4.60	34.83	27.61
378	4.59	34.81	600	4.30	34.94	27.72
495	4.62	34.96	800	3.90	34.93	27.77
614	4.27	34.94	(1,000)	3.75	34.93	27.78
900	3.80	34.93				

Station 3801; 22 Apr.; latitude 45°22′ N., longitude 45°58′ W.; depth 3475 meters; dynamic height 970.881

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.19	34.42	0	6.19	34.42	27.09
26	5.96	34.45	25	5.95	34.45	27.15
52	4.51	34.54	50	4.65	34.53	27.37
78	4.34	34.61	75	4.35	34.60	27.45
103	4.13	34.62	100	4.15	34.62	27.49
156	3.97	34.71	150	4.00	34.70	27.57
208	3.85	34.78	200	3.85	34.77	27.64
311	3.84	34.85	300	3.85	34.84	27.69
385	3.95	34.88	400	3.95	34.88	27.72
577	3.90	34.91	600	3.90	34.91	27.75
770	3.63	34.875	800	3.65	34.88	27.75
972	3.59	34.91	1,000	3.55	34.91	27.78
1,495	3.43	34.93				

Station 3802; 22 Apr.; latitnde 45°19.5′ N., longitude 46°37′ W.; depth 3292 meters; dynamic height 970.884

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.44	34.07	0	4.44	34.07	27.02
27	5.11	34.24	25	5.05	34.23	27.09
52	4.52	34.47	50	4.60	34.45	27.30
79	4.11	34.53	75	4.15	34.53	27.42
105	3.99	34.59	100	4.00	34.58	27.48
158	4.03	34.69	150	4.00	34.68	27.56
211	4.03	34.75	200	4.05	34.74	27.59
316	3.93	34.84	300	3.95	34.83	27.68
408	3.89	34.88	400	3.85	34.88	27.73
609	3.64	34.89	600	3.65	34.89	27.75
808	3.60	34.90	800	3.60	34.90	27.77
1,014	3.52	34.90	1,000	3.50	34.90	27.78
1,539	3.41	34.925				

Station 3803; 22 Apr.; latitude 45°18.5′ N., longitude 47°24′ W.; depth 2999 meters; dynamic height 970.893

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.80	34.43	0	1.80	34.43	26.76
25	5.48	34.32	25	5.48	34.32	27.10
50	5.69	34.51	50	5.69	34.51	27.23
74	6.19	34.67	75	6.20	34.67	27.29
99	5.29	34.66	100	5.20	34.66	27.41
149	4.48	34.71	150	4.50	34.71	27.52
198	4.96	34.87	200	4.95	34.88	27.61
297	4.70	34.95	300	4.65	34.95	27.70
372	4.34	34.93	400	4.25	34.93	27.73
559	4.03	34.94	600	3.95	34.91	27.76
749	3.63	34.90	800	3.60	34.90	27.77
945	3.55	34.91	1,000	3.50	34.91	27.79
1,460	3.48	34.945				

Station 3804; 23 Apr.; latitude 45°31.5′ N., longitude 47°48′ W.; depth 1463 meters; dynamic height 970.946

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.02	33.03	0	0.02	33.03	26.54
24	0.01	33.03	25	0.00	33.03	26.54
49	0.01	33.49	50	0.00	33.51	26.93
73	0.15	33.69	75	0.15	33.70	27.07
97	0.52	33.89	100	0.65	33.91	27.21
146	2.09	34.25	150	2.10	34.27	27.40
194	2.39	34.47	200	2.40	34.49	26.55
291	3.17	34.69	300	3.20	34.70	27.65
358	3.38	34.78	400	3.50	34.82	27.72
536	3.78	34.88	600	3.75	34.89	27.74
713	3.65	34.89	800	3.60	34.89	27.76
900	3.57	34.90	1,000	3.55	34.90	27.77
1,286	3.62	34.91				

Station 3805; 23 Apr.; latitude 45°41′ N., longitnde 48°02′ W.; depth 622 meters; dynamic height 971.018

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.27	33.08	0	0.27	33.08	26.57
25	0.26	33.08	25	0.26	33.08	26.57
50	−1.01	33.17	50	−1.01	33.17	26.69
75	−1.16	33.39	75	−1.16	33.39	26.88
100	−0.33	33.63	100	−0.33	33.63	27.04
150	0.29	33.85	150	0.29	33.85	27.18
201	1.03	34.01	200	1.00	34.01	27.27
301	2.18	34.39	300	2.15	34.38	27.49
389	3.36	34.72	400	3.40	34.74	27.66
583	3.74	34.86	600	3.75	34.87	27.73

Station 3806; 23 Apr.; latitude 45°46.5′ N., longitude 48°12′ W.; depth 169 meters; dynamic height 971.053

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.70	33.11	0	0.70	33.11	26.56
25	0.65	33.11	25	0.65	33.11	26.57
50	−1.04	33.21	50	−1.04	33.21	26.73
75	−1.01	33.39	75	−1.01	33.35	26.87
100	−0.56	33.55	100	−0.56	33.55	26.98
150	−0.38	33.60	150	−0.38	33.60	27.02

Station 3807; 23 Apr.; latitude 45°50.5′ N., longitude 48°18′ W.; depth 115 meters; dynamic height 971.061

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.74	33.11	0	0.74	33.11	26.56
25	0.54	33.10	25	0.54	33.10	26.56
50	−0.35	33.09	50	−0.35	33.09	26.60
76	−1.11	33.26	75	−1.10	33.26	26.77
101	−0.80	33.48	100	−0.80	33.47	26.93

Station 3808; 23 Apr.; latitude 45°58.5′ N., longitude 48°29′ W.; Depth 89 meters; dynamic height 971.054

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.09	33.17	0	1.09	33.17	26.59
26	0.73	33.17	25	0.75	33.17	26.61
52	−0.22	33.19	50	−0.20	33.18	26.67
78	−0.17	33.51	75	−0.20	33.49	26.92

STATIONS OCCUPIED IN 1949—Continued

Station 3809; 23 Apr.; latitude 46°06.5′ N., longitude 48°42′ W.; depth 78 meters; dynamic height 971.052

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.73	33.27	0	1.73	33.27	26.63
25	1.18	33.28	25	1.18	33.28	26.68
50	0.87	33.36	50	0.87	33.36	26.76
66	0.83	33.38	(75)	0.80	33.39	26.78

Station 3810; 23 Apr.; latitude 46°17.5′ N., longitude 49°00′ W.; depth 62 meters; dynamic height 971.046

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.52	33.38	0	2.52	33.38	26.66
25	1.75	33.41	25	1.75	33.41	26.75
50	1.49	33.44	50	1.49	33.44	26.78

Station 3811; 7 May; latitude 46°47.5′ N., longitude 44°40′ W.; depth 132 meters; dynamic height 970.878

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.38	34.26	0	5.38	34.265	27.06
24	5.14	34.28	25	5.15	34.28	27.10
49	4.68	34.26	50	4.65	34.26	27.15
73	3.96	34.32	75	3.95	34.33	27.28
97	3.53	34.44	(100)	3.50	34.46	27.43

Station 3812; 7 May; latitude 46°43′ N., longitude 44°37′ W.; depth 178 meters; dynamic height 970.885

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.35	34.27	0	5.35	34.27	27.08
24	5.35	34.26	25	5.35	34.26	27.07
48	4.67	34.28	50	4.65	34.28	27.16
73	4.23	34.31	75	4.20	34.31	27.24
97	3.95	34.35	100	3.95	34.36	27.31
145	3.53	34.50	(150)	3.45	34.52	27.48

Station 3813; 7 May; latitude 46°36.5′ N., longitude 44°35′ W.; depth 220 meters; dynamic height 970.883

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.74	34.16	0	4.74	34.16	27.06
24	4.75	34.16	25	4.75	34.16	27.06
72	3.66	34.21	50	4.15	34.17	27.14
120	3.50	34.48	75	3.65	34.22	27.23
215	3.78	34.77	100	3.55	34.38	27.35
-------	-------	-------	150	3.55	34.58	27.51
-------	-------	-------	200	3.70	34.73	27.62

Station 3814; 7-8 May; latitude 46°28′ N., longitude 44°32′ W.; depth 778 meters; dynamic height 970.876

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.96	34.18	0	4.96	34.18	27.05
22	5.04	34.20	25	5.00	34.20	27.06
44	4.50	34.18	50	4.40	34.19	27.12
66	4.00	34.22	75	3.75	34.29	27.27
88	3.48	34.41	100	3.50	34.48	27.44
132	3.61	34.60	150	3.65	34.65	27.56
177	3.69	34.72	200	3.70	34.76	27.65
265	3.75	34.85	300	3.75	34.86	27.72
310	3.73	34.86	400	3.70	34.87	27.74
397	3.69	34.87	(600)	3.60	34.89	27.76
580	3.59	34.89	-------	-------	-------	-------

Station 3815; 8 May; latitude 46°21′ N., longitude 44°31′ W., depth 1554 meters; dynamic height 970.900

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.01	34.19	0	5.01	34.19	27.05
26	4.86	34.18	25	4.85	34.18	27.06
51	4.30	34.18	50	4.30	34.18	27.12
78	3.65	34.32	75	3.70	34.30	27.28
103	3.50	34.40	100	3.50	34.39	27.37
155	3.36	34.56	150	3.35	34.54	27.50
206	3.55	34.69	200	3.50	34.68	27.60
309	3.69	34.83	300	3.80	34.84	27.70
278	3.88	34.84	400	3.70	34.87	27.74
429	3.66	34.87	600	3.65	34.88	27.74
588	3.66	34.88	800	3.65	34.89	27.75
757	3.66	34.89	1,000	3.60	34.90	27.77
1,202	3.54	34.905	-------	-------	-------	-------

Station 3816; 8 May; latitude 46°01′ N., longitude 44°26′ W., depth 3932 meters; dynamic height 971.099

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	8.89	34.26	0	8.87	34.26	26.58
26	10.72	34.75	25	10.70	34.74	26.64
52	13.25	35.44	50	13.25	35.38	26.65
78	13.00	35.54	75	12.75	35.54	26.88
103	12.67	35.53	100	12.70	35.53	26.88
156	9.80	35.04	150	10.10	35.08	27.01
208	8.47	34.92	200	8.60	34.93	27.14
311	6.47	34.81	300	6.60	34.84	27.37
292	6.73	34.86	400	6.10	34.95	27.52
429	5.98	34.97	600	3.85	34.83	27.68
562	3.82	34.82	800	3.80	34.88	27.73
720	3.84	34.87	1,000	3.70	34.89	27.75
1,145	3.63	34.90	-------	-------	-------	-------

Station 3817; 8 May; latitude 46°02′ N., longitude 45°18′ W., depth 3292 meters; dynamic height 971.071

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	11.30	34.92	0	11.30	34.915	26.68
24	11.83	35.08	25	11.85	35.08	26.70
48	12.02	35.31	50	12.00	35.31	26.85
72	11.54	35.24	75	11.45	35.22	26.89
96	10.70	35.10	100	10.55	35.09	26.94
144	9.64	35.05	150	9.60	35.05	27.08
192	9.19	35.10	200	9.05	35.10	27.21
288	7.49	35.02	300	7.15	34.99	27.41
359	5.82	34.87	400	5.65	34.89	27.53
541	5.02	34.98	600	4.75	34.97	27.70
726	4.24	34.94	800	4.00	34.92	27.75
921	3.70	34.89	1,000	3.65	34.89	27.75
1,430	3.53	34.92	-------	-------	-------	-------

Station 3818; 8 May; latitude 46°05.5′ N., longitude 45°50′ W., depth 2140 meters; dynamic height 970.914

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.40	34.18	0	6.40	34.18	26.87
25	6.51	34.26	25	6.51	34.26	26.92
50	5.28	34.21	50	5.28	34.21	27.04
75	4.91	34.41	75	4.91	34.435	27.26
99	4.53	34.50	100	4.50	34.50	27.36
150	4.15	34.66	150	4.17	34.66	27.52
199	3.81	34.68	200	3.80	34.68	27.57
298	3.79	34.76	300	3.80	34.77	27.65
349	3.82	34.79	400	3.80	34.82	27.69
529	3.83	34.89	600	3.75	34.90	27.75
714	3.65	34.91	800	3.60	34.91	27.78
912	3.55	34.90	1,000	3.55	34.91	27.78
1,117	3.52	34.92	-------	-------	-------	-------

Station 3819; 8-9 May; latitude 46°11′ N., longitude 46°26′ W., depth 640 meters; dynamic height 970.881

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.14	33.73	0	4.14	33.73	26.79
20	4.33	33.82	25	4.60	33.87	26.85
40	5.30		50	4.30	34.24	27.17
60	3.05	34.32	75	2.75	34.39	27.44
80	2.77	34.415	100	3.40	34.55	27.51
120	4.12	34.69	150	4.05	34.75	27.60
160	4.03	34.76	200	4.10	34.82	27.66
240	4.15	34.88	300	4.05	34.90	27.72
309	4.03	34.90	400	3.75	34.90	27.75
425	3.71	34.90	(600)	3.60	34.88	27.75
533	3.61	34.885				

Station 3820; 9 May; latitude 46°15′ N., longitude 47°10′ W., depth 1065 meters; dynamic height 970.884

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.34	33.62	0	2.34	33.625	26.87
25	2.50	33.66	25	2.50	33.665	26.88
50	4.48	34.29	50	4.48	34.29	27.19
75	2.77	34.41	75	2.77	34.41	27.46
100	2.94	34.53	100	2.94	34.53	27.53
150	3.02	34.62	150	3.02	34.625	27.61
200	3.25	34.73	200	3.25	34.73	27.66
300	3.72	34.85	300	3.72	34.85	27.72
328	3.88	34.87	400	3.80	34.88	27.73
505	3.76	34.89	600	3.70	34.87	27.74
691	3.66	34.85	800	3.60	34.88	27.75
881	3.60	34.90	(1,000)	3.55	34.91	27.78

Station 3821; 9 May; latitude 46°14′ N., longitude 47°22′ W., depth 586 meters; dynamic height 970.923

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.76	33.38	0	1.76	33.38	26.72
26	1.57	33.42	25	1.60	33.42	26.76
52	0.55	33.72	50	0.60	33.69	27.03
78	1.21	34.015	75	1.15	33.98	27.23
104	1.86	34.22	100	1.75	34.19	27.36
154	2.25	34.43	150	2.20	34.41	27.51
206	2.87	34.61	200	2.80	34.59	27.59
310	3.28	34.74	300	3.20	34.73	27.67
342	3.29	34.78	400	3.45	34.80	27.70
549	3.63	34.86	(600)	3.65	34.86	27.73

Station 3822; 9 May; latitude 46°13′ N., longitude 47°46′ W., depth 169 meters; dynamic height 970.991

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.58	32.98	0	0.58	32.985	26.48
25	−0.03	33.22	25	−0.03	33.22	26.99
50	−1.46	33.29	50	−1.46	33.29	26.79
75	−1.16	33.42	75	−1.16	33.42	26.91
99	−0.20	33.62	100	−0.15	33.62	27.02
149	0.60	33.83	150	0.60	33.83	27.14

Station 3823; 9 May; latitude 46°13′ N., longitude 48°00′ W., depth 115 meters; dynamic height 970.992

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.95	33.02	0	0.95	33.02	26.48
25	0.63	33.02	25	0.63	33.02	26.50
49	−1.67	33.25	50	−1.65	33.26	26.78
74	−1.22	33.44	75	−1.10	33.46	26.93
98	0.03	33.71	100	0.10	33.72	27.09

Station 3824; 9 May; latitude 46°14′ N., longitude 48°26′ W., depth 89 meters; dynamic height 970.991

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.42	33.21	0	2.42	33.21	26.54
25	2.23	33.20	25	2.23	33.205	26.54
50	0.80	33.30	50	0.80	33.305	26.71
75	−0.02	33.57	75	−0.02	33.57	26.98

Station 3825; 9 May; latitude 46°16′ N., longitude 49°00′ W., depth 64 meters; dynamic height 970.985

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.73	33.35	0	2.73	33.35	26.61
25	2.68	33.36	25	2.68	33.36	26.62
50	1.74	33.38	50	1.74	33.37	26.71

Station 3826; 9 May; latitude 46°06′ N., longitude 48°40′ W., depth 80 meters; dynamic height 970.988

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.30	33.20	0	2.30	33.20	26.54
25	2.23	33.22	25	2.23	33.22	26.55
50	1.52	33.30	50	1.52	33.30	26.66
65	0.39	33.42	(75)	−0.10	33.50	26.92

Station 3827; 9 May; latitude 46°01.5′ N., longitude 48°27′ W., depth 89 meters; dynamic height 970.987

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.40	33.22	0	2.40	33.215	26.54
25	2.38	33.22	25	2.38	33.22	26.54
49	0.69	33.30	50	0.55	33.31	26.73
74	−0.03	33.54	(75)	−0.05	33.46	26.89

Station 3828; 10 May; latitude 45°52′ N., longitude 48°13′ W., depth 115 meters; dynamic height 970.979

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.31	33.05	0	1.31	33.05	26.49
25	0.04	33.10	25	0.04	33.10	26.59
49	−1.24	33.45	50	−1.25	33.46	26.94
74	−0.76	33.50	75	−0.75	33.50	26.95
98	−0.28	33.64	(100)	−0.20	33.65	27.05

Station 3829; 10 May; latitude 45°49′ N., longitude 48°09′ W., depth 178 meters; dynamic height 970.971

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.43	33.04	0	0.43	33.04	26.53
25	0.24	33.14	25	0.24	33.145	26.62
50	0.37	33.57	50	0.37	33.57	26.96
75	0.23	33.76	75	0.23	33.765	27.12
100	0.33	33.80	100	0.33	33.795	27.14
164	0.55	33.84	150	0.50	33.83	27.15

STATIONS OCCUPIED IN 1949—Continued

Station 3830; 10 May; latitude 45°46′ N., longitude 48°02′ W., depth 635 meters; dynamic height 970.929

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.22	33.35	0	1.22	33.35	26.73
25	1.01	33.39	25	1.01	33.39	26.77
49	0.14	33.66	50	0.15	33.68	27.05
74	0.08	33.82	75	0.10	33.90	27.23
98	1.07	34.06	100	1.15	34.07	27.31
147	2.00		150	2.00	34.34	27.46
196	2.34	34.49	200	2.35	34.50	27.56
294	3.02	34.66	300	3.05	34.67	27.64
395	3.42	34.78	400	3.40	34.79	27.70
591	3.67	34.87	600	3.65	34.87	27.74

Station 3831; 10 May; latitude 45°37′ N., longitude 47°49′ W.; depth 1424 meters; dynamic height 970.898

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.39	33.46	0	2.39	33.46	26.73
24	2.36	33.55	25	2.35	33.56	26.82
47	2.40	34.00	50	2.40	34.03	27.18
71	2.08	34.20	75	2.10	34.24	27.37
94	2.40	34.42	100	2.45	34.45	27.51
141	2.83	34.58	150	2.90	34.60	27.60
188	3.11	34.69	200	3.15	34.71	27.66
282	3.35	34.76	300	3.40	34.77	27.69
294	3.40	34.78	400	3.65	34.81	27.69
453	3.73	34.82	600	3.65	34.86	27.73
620	3.67	34.86	800	3.70	34.90	27.76
795	3.68	34.90	1,000	3.60	34.90	27.77
1,170	3.52	34.90				

Station 3832; 10 May; latitude 45°20′ N., longitude 47°14′ W.; depth 2743 meters; dynamic height 970.908

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.40	34.12	0	6.40	34.12	26.83
25	6.28	34.16	25	6.28	34.16	26.87
48	6.12	34.36	50	6.10	34.38	27.07
73	5.27	34.52	75	5.20	34.52	27.30
97	4.59	34.53	100	4.55	34.53	27.37
146	4.22	34.64	150	4.25	34.65	27.50
194	4.52	34.78	200	4.50	34.79	27.58
291	4.38	34.89	300	4.35	34.89	27.68
358	4.00	34.875	400	3.90	34.88	27.72
549	3.76	34.90	600	3.70	34.90	27.76
749	3.64	34.90	800	3.60	34.90	27.77
953	3.57	34.89	1,000	3.55	34.895	27.77
1,489	3.49	34.94				

Station 3833; 10 May; latitude 45°18′ N., longitude 46°34′ W.; depth 3292 meters; dynamic height 970.906

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.29	33.91	0	6.29	33.91	26.69
27	5.89	34.07	25	5.90	34.06	26.85
53	5.22	34.24	50	5.25	34.22	27.05
80	5.01	34.56	75	5.05	34.54	27.32
106	4.45	34.59	100	4.55	34.58	27.41
160	4.53	34.75	150	4.50	34.73	27.53
214	3.92	34.76	200	4.00	34.76	27.62
320	3.96	34.86	300	3.95	34.84	27.68
423	3.95	34.89	400	3.95	34.89	27.72
632	3.72	34.905	600	3.75	34.90	27.75
811	3.71	34.915	800	3.70	34.91	27.77
1,058	3.54	34.91	1,000	3.60	34.91	27.78
1,611	3.39	34.93				

Station 3834; 10 May; latitude 45°20′ N., longitude 45°50′ W.; depth 3539 meters; dynamic height 971.065

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	13.21	35.05	0	13.21	35.05	26.41
26	12.32	34.97	25	12.35	34.98	26.53
54	10.98	34.925	50	11.20	34.93	26.70
81	9.78	34.86	75	10.00	34.87	26.87
108	10.80	35.20	100	10.55	35.09	26.94
162	9.78	35.07	150	10.05	35.10	27.04
216	8.49		200	8.90	34.9[illegible]	27.13
324	5.54	34.80	300	6.20	34.8[illegible]	27.41
404	5.31	34.96	400	5.35	34.9[illegible]	27.62
605	4.47	34.96	600	4.45	34.9	27.73
804	4.11	34.955	800	4.10	34.96	27.77
1,005	3.97	34.96	1,000	4.00	34.96	27.78
1,516	3.61	31.94				

Station 3835; 10–11 May; latitude 45°20′ N., longitude 45°15′ W.; depth 3731 meters; dynamic height 971.153

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	14.49	35.65	0	14.49	35.65	26.61
25	14.45	35.64	25	14.45	35.64	26.60
51	14.08	35.63	50	14.10	35.63	26.67
76	13.31	35.53	75	13.30	35.53	26.76
102	13.09	35.54	100	13.10	35.54	26.81
152	12.84	35.61	150	12.90	35.61	26.91
203	10.56	35.205	200	10.70	35.23	27.02
305	8.27	34.99	300	8.40	35.00	27.23
401	6.15	34.89	400	6.20	34.89	27.56
600	5.12	34.97	600	5.12	34.97	27.66
798	4.56	34.98	800	4.55	34.98	27.73
998	4.30	34.98	1,000	4.30	34.98	27.75
1,509	3.56	34.915				

Station 3836; 11 May; latitude 44°50′ N., longitude 45°18′ W.; depth 4061 meters; dynamic height 971.062

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	12.58	35.00	0	12.58	35.00	26.50
22	12.79	35.07	25	12.75	35.07	26.52
45	11.81	35.07	50	11.60	35.07	26.74
67	11.07	35.06	75	11.05	35.08	26.85
90	11.03	35.12	100	10.50	35.03	26.90
134	7.43	34.63	150	7.50	34.73	27.15
179	6.35	34.54	200	6.65	34.68	27.23
269	6.13	34.78	300	6.10	34.83	27.42
199	7.00	34.72	400	4.70	34.83	27.59
298	6.51	34.865	600	4.50	34.94	27.70
398	4.70	34.825	800	4.30	34.97	27.75
512	4.58	31.93	(1,000)	4.00	34.99	27.80
819	4.27	34.97				

Station 3837; 11 May; latitude 44°18′ N., longitude 45°16′ W.; depth 4322 meters; dynamic height 970.991

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	8.55	33.86	0	8.55	33.86	26.32
27	9.82	34.48	25	9.80	34.46	26.58
53	6.68	34.285	50	7.05	31.31	26.89
80	4.90	34.23	75	5.15	34.24	27.07
106	6.60	34.62	100	6.25	34.55	27.19
160	5.15	34.54	150	5.35	31.55	27.30
213	4.89	34.61	200	4.95	34.62	27.40
320	4.19	34.74	300	4.30	34.72	27.56
417	4.58	34.905	400	4.55	34.88	27.65
630	4.08	31.93	600	4.10	34.93	27.74
836	3.94	34.93	800	3.95	34.93	27.75
1,050	3.66	34.92	1,000	3.70	34.92	27.78
1,590	3.59	34.94				

STATIONS OCCUPIED IN 1949—Continued

Station 3838; 11 May; latitude 44°20.5′ N., longitude 45°50′ W.; depth 3878 meters; dynamic height 970.933

Observed values			Sealed values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.23	33.24	0	4.23	33.24	26.39
26	4.15	33.53	25	4.15	33.52	26.62
52	2.94	33.95	50	2.95	33.92	27.05
78	3.34	34.22	75	3.30	34.20	27.24
103	4.40	34.50	100	4.30	34.46	27.35
154	4.22	34.59	150	4.25	34.58	27.44
206	3.55	34.64	200	3.60	34.64	27.56
309	4.52	34.90	300	4.45	34.88	27.66
381	4.87	34.985	400	4.85	34.99	27.70
573	4.15	34.95	600	4.05	34.95	27.76
764	3.82	34.92	800	3.80	34.92	27.77
960	3.73	34.93	1,000	3.70	34.93	27.78
1,459	3.55	34.92				

Station 3839; 11 May; latitude 44°25′ N., longitude 46°22′ W.; depth 3731 meters; dynamic height 971.084

Observed values			Sealed values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	15.04	35.88	0	15.04	35.88	26.58
24	15.06	35.88	25	15.05	35.88	26.58
48	14.95	35.875	50	14.95	35.88	26.67
73	14.96	35.87	75	14.80	35.86	26.69
96	13.36	35.59	100	13.20	35.57	26.81
145	12.15	35.43	150	12.05	35.42	26.93
193	10.64	35.32	200	10.40	35.30	27.13
289	6.19	34.76	300	6.35	34.85	27.41
331	5.98	34.88	400	5.10	34.89	27.59
500	4.57	34.92	600	4.35	34.94	27.72
669	4.25	34.95	800	3.95	34.94	27.76
850	3.89	34.94	1,000	3.75	34.94	27.78
1,327	3.58	34.925				

Station 3840; 12 May; latitude 44°31′ N., longitude 47°00′ W.; depth 3658 meters; dynamic height 971.105

Observed values			Sealed values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	14.95	35.87	0	14.95	35.87	26.67
28	14.94	35.87	25	14.95	35.87	26.67
56	12.60	35.48	50	13.00	35.57	26.85
84	13.04	35.66	75	12.90	35.61	26.91
111	12.98	35.65	100	13.00	35.66	26.92
167	12.29	35.53	150	12.60	35.57	26.93
224	10.16	35.28	200	11.30	35.41	27.06
335	5.52	34.71	300	6.65	34.86	27.38
342	5.42	34.70	400	5.25	34.76	27.48
503	4.99	34.87	600	4.70	34.93	27.67
657	4.54	34.97	800	4.00	34.92	27.75
839	3.92	34.91	1,000	3.90	34.93	27.76
1,322	3.80	34.96				

Station 3841; 12 May; latitude 44°39′ N., longitude 47°31′ W.; depth 3731 meters; dynamic height 970.991

Observed values			Sealed values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.99	33.04	0	1.99	33.04	26.43
27	8.94	34.45	25	8.80	34.34	26.65
53	9.43	34.65	50	9.40	34.62	26.78
80	9.19	34.86	75	9.25	34.83	26.96
106	8.13	34.72	100	8.40	34.76	27.04
160	4.27	34.34	150	5.00	34.41	27.23
212	2.27	34.32	200	2.55	34.31	27.40
318	2.97	34.64	300	2.85	34.59	27.59
425	3.60	34.80	400	3.45	34.77	27.68
635	3.82	34.89	600	3.80	34.88	27.73
816	3.67	34.90	800	3.70	34.90	27.76
1,057	3.58	34.91	1,000	3.55	31.91	27.78
1,582	3.52	34.93				

Station 3842; 12 May; latitude 44°44′ N., longitude 47°58′ W.; depth 3274 meters; dynamic height 970.915

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.73	33.15	0	1.73	33.15	26.54
26	0.79	33.30	25	0.80	33.30	26.71
52	0.55	33.67	50	0.55	33.64	27.00
78	1.00	33.98	75	0.95	33.95	27.22
104	1.89	34.26	100	1.75	34.21	27.38
155	2.69	34.52	150	2.65	34.50	27.54
208	3.17	34.66	200	3.10	34.64	27.61
312	3.52	34.80	300	3.50	34.79	27.69
412	3.81	34.88	400	3.80	34.87	27.73
615	3.69	34.89	600	3.70	34.89	27.75
817	3.58	34.885	800	3.55	34.88	27.75
1,022	3.65	34.91	1,000	3.65	34.91	27.77
1,532	3.53	34.935				

Station 3843; 12 May; latitude 44°48′ N., longitude 48°24′ W.; depth 2415 meters; dynamic height 970.884

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.48	33.36	0	2.48	33.36	26.64
26	2.32	33.45	25	2.30	33.47	26.75
52	2.03	34.21	50	2.05	34.16	27.32
77	2.41	34.39	75	2.40	34.37	27.46
103	2.52	34.47	100	2.50	34.46	27.52
154	2.99	34.63	150	2.95	34.62	27.61
205	3.38	34.74	200	3.35	34.73	27.65
308	3.71	34.84	300	3.70	34.83	27.70
405	3.82	34.88	400	3.80	34.88	27.73
609	3.90	34.925	600	3.90	34.92	27.76
807	3.82	34.935	800	3.80	34.93	27.77
1,010	3.55	34.90	1,000	3.55	34.90	27.77
1,524	3.61	34.95				

Station 3844; 12 May; latitude 44°52′ N., longitude 48°56′ W., depth 856 meters; dynamic height 971.013

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.92	33.05	0	0.92	33.05	26.51
24	0.61	33.14	25	0.60	33.15	26.61
48	−0.68	33.38	50	−0.70	33.38	26.85
72	−0.71	33.42	75	−0.70	33.43	26.89
96	−0.53	33.50	100	−0.50	33.52	26.96
144	0.16	33.76	150	0.30	33.80	27.14
192	1.22	34.05	200	1.35	34.09	27.31
287	2.56	34.49	300	2.65	34.53	27.56
362	3.04	34.65	400	3.20	34.70	27.65
554	3.63	34.84	600	3.65	34.86	27.73
757	3.71	34.87	800	3.70	34.87	27.74

Station 3845; 12 May; latitude 44°54′ N., longitude 49°06′ W.; depth 96 meters; dyuamic height 971.045

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.97	33.06	0	3.97	33.06	26.26
25	1.87	33.08	25	1.87	33.08	26.47
49	0.14	33.22	50	0.15	33.23	26.69
74	−0.06	33.30	(75)	−0.10	33.34	26.79

Station 3846; 12 May; latitude 44°55′ N., longitude 49°24′ W.; depth 75 meters; dynamie height 971.045

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.52	33.07	0	2.52	33.07	26.41
23	2.47	33.09	25	2.30	33.10	26.45
54	0.34	33.27	50	0.60	33.24	26.68
			(75)	0.05	33.32	26.77

STATIONS OCCUPIED IN 1949—Continued

Station 3847; 13 May; latitude 44°15′ N., longitude 49°22′ W.; depth 47 meters; dynamic height 971.029

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.53	33.32	0	3.53	33.32	26.52
15	3.46	33.30	25	3.35	33.31	26.52
30	3.28	33.31	-------	-------	-------	-------

Station 3848; 13 May; latitude 44°08′ N., longitude 49°01′ W.; depth 93 meters; dynamic height 971.026

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.85	33.03	0	1.85	33.03	26.43
24	1.45	33.12	25	1.45	33.12	26.53
49	-------	33.26	50	0.50	33.26	26.69
73	−0.39	33.26	75	−0.40	33.26	26.74

Station 3849; 13 May; latitude 44°07′ N., longitude 48°57′ W.; depth 174 meters; dynamic height 971.008

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.01	33.02	0	2.01	33.02	26.41
25	−0.32	33.29	25	−0.32	33.29	26.75
50	−0.70	33.36	50	−0.70	33.36	26.83
75	−0.59	33.52	75	−0.59	33.52	26.96
100	−0.13	33.65	100	−0.13	33.65	27.05
150	0.61	33.85	150	0.61	33.85	27.16

Station 3850; 13 May; latitude 44°06′ N., longitude 48°46′ W.; depth 657 meters; dynamic height 971.026

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.40	33.05	0	2.40	33.05	26.40
25	0.75	33.14	25	0.75	33.14	26.59
50	−0.26	33.29	50	−0.26	33.29	26.75
75	−0.50	33.40	75	−0.50	33.40	26.86
100	−0.64	33.48	100	−0.64	33.48	26.93
150	0.03	33.72	150	0.03	33.72	27.10
199	0.98	33.99	200	1.00	34.00	27.26
299	2.52	34.50	300	2.55	34.50	27.55
399	3.20	34.70	400	3.20	34.70	27.65
595	3.66	34.85	600	3.65	34.85	27.72

Station 3851; 13 May; latitude 44°03′ N., longitude 48°40′ W.; depth 1646 meters; dynamic height 971.032

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.67	33.04	0	2.67	33.01	26.38
25	2.07	33.06	25	2.07	33.06	26.44
50	−0.10	33.20	50	−0.10	33.20	26.68
75	−0.82	33.36	75	−0.82	33.36	26.83
100	−0.76	33.52	100	−0.76	33.52	26.95
150	0.08	33.73	150	0.08	33.73	27.09
201	1.33	34.10	200	1.30	34.09	27.31
301	2.25	34.40	300	2.25	34.39	27.48
384	3.24	34.70	400	3.35	34.73	27.65
582	3.74	34.87	600	3.75	34.87	27.73
783	3.70	34.89	800	3.70	34.89	27.75
860	-------	-------	(1,000)	3.65	34.90	27.76

Station 3852; 13 May; latitude 43°59′ N., longitude 48°21′ W.; depth 2999 meters; dynamic height 971.024

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	11.08	34.82	0	11.08	34.82	26.65
24	10.90	34.86	25	10.90	34.87	26.71
48	12.50	35.52	50	12.45	35.52	26.92
72	11.98	35.44	75	11.90	35.43	26.96
96	11.23	35.33	100	11.10	35.31	27.02
143	9.75	35.15	150	9.45	35.10	27.14
190	6.22	34.68	200	6.15	34.69	27.31
286	5.87	34.85	300	5.75	34.87	27.51
398	5.11	34.94	400	5.10	34.94	27.63
561	4.64	34.96	600	4.50	34.95	27.71
700	4.16	34.94	800	3.95	34.94	27.76
888	3.91	34.94	1,000	3.85	34.94	27.77
1,380	3.66	34.935	-------	-------	-------	-------

Station 3853; 13 May; latitude 43°50.5′ N., longitude 47°49′ W.; depth 3768 meters; dynamic height 970.943

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	7.62	33.72	0	7.62	33.72	26.35
26	5.89	33.72	25	5.90	33.72	26.58
51	4.21	33.82	50	4.30	33.81	26.83
77	3.39	34.02	75	3.45	34.00	27.07
102	3.32	34.31	100	3.30	34.28	27.30
153	3.97	34.63	150	3.95	34.61	27.50
204	4.17	34.74	200	4.15	34.73	27.57
306	4.26	34.85	300	4.25	34.85	27.66
408	4.38	34.92	400	4.35	34.92	27.71
615	4.08	34.935	600	4.10	34.93	27.74
825	3.75	34.92	800	3.80	34.92	27.77
1,070	3.66	34.92	1,000	3.65	34.92	27.78
1,567	3.61	34.95	-------	-------	-------	-------

Station 3854; 13-14 May; latitude 43°41.5′ N., longitude 47°05′ W.; depth 4029 meters; dynamic height 971.206

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	13.66	35.62	0	13.66	35.62	26.76
28	13.02	35.61	25	13.05	35.61	26.87
57	12.94	35.66	50	12.95	35.65	26.92
85	12.90	35.66	75	12.90	35.66	26.94
112	12.94	35.66	100	12.90	35.66	26.94
169	12.92	35.67	150	12.95	35.67	26.94
226	12.78	35.64	200	12.90	35.66	26.94
338	10.71	35.34	300	11.45	35.47	27.08
411	8.43	35.04	400	8.80	35.09	27.24
615	5.48	34.94	600	5.60	34.94	27.57
820	4.31	34.92	800	4.35	34.92	27.71
1,035	4.09	34.95	1,000	4.10	34.95	27.76
1,586	3.58	34.92	-------	-------	-------	-------

Station 3855; 14 May; latitude 43°33′N., longitude 46°34′ W.; depth 4500 meters; dynamic height 971.129

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	14.96	35.85	0	14.96	35.85	26.65
27	14.98	35.85	25	14.95	35.85	26.65
54	14.65	35.82	50	14.70	35.83	26.69
82	14.03	35.70	75	14.20	35.75	26.74
108	12.53	35.40	100	12.95	35.48	26.79
162	12.54	35.54	150	12.55	35.51	26.90
216	11.09	35.27	200	11.50	35.36	26.98
324	6.62	34.80	300	7.70	34.88	27.24
419	5.31	34.86	400	5.50	34.85	27.52
635	4.39	34.93	600	4.45	34.93	27.70
856	3.97	34.93	800	4.05	34.93	27.74
1,079	3.90	34.94	1,000	3.90	34.94	27.77
1,636	3.59	34.94	-------	-------	-------	-------

STATIONS OCCUPIED IN 1949—Continued

Station 3856; 14 May; latitude 43°22′ N., longitude 46°04′ W.; depth 4470 meters; dynamic height 970.975

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	8.33	33.61	0	8.33	33.61	26.16
25	7.55	34.05	25	7.55	34.05	26.61
50	6.47	34.39	50	6.47	34.39	27.03
75	5.04	34.36	75	5.04	34.36	27.19
100	7.43	34.80	100	7.43	34.80	27.22
150	5.79	34.65	150	5.79	34.65	27.32
200	4.58	34.62	200	4.58	34.62	27.45
300	4.69	34.84	300	4.69	34.84	27.60
363	4.94	34.93	400	4.90	34.96	27.68
548	4.70	35.00	600	4.65	35.00	27.74
734	4.48	35.00	800	4.30	34.99	27.76
921	4.02	34.96	1,000	3.95	34.96	27.78
1,418	3.72	34.95	-------	-------	-------	-------

Station 3857; 14 May; latitude 42°59′ N., longitude 46°34′ W.; depth 4372 meters; dynamic height 970.929

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	8.96	33.80	0	8.96	33.80	26.21
20	6.46	33.96	25	6.35	34.02	26.76
40	6.11	34.20	50	5.45	34.24	27.04
60	4.94	34.28	75	4.40	34.35	27.25
80	4.33	34.37	100	4.35	34.48	27.35
121	-------	-------	150	4.65	34.71	27.51
161	4.73	34.76	200	4.80	34.83	27.58
241	4.82	34.88	300	4.65	34.90	27.66
362	4.52	34.91	400	4.45	34.92	27.70
547	4.27	34.96	600	4.20	34.96	27.76
736	3.95	34.94	800	3.80	34.93	27.77
933	3.68	34.91	1,000	3.65	34.91	27.77
1,446	3.57	34.94	-------	-------	-------	-------

Station 3858; 14 May; latitude 42°37.5′ N., longitude 46°54′ W.; depth 4244 meters; dynamic height 971.055

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	13.53	35.18	0	13.53	35.18	26.45
26	7.67	34.12	25	7.70	34.14	26.66
52	7.32	34.17	50	7.35	34.16	26.73
78	7.29	34.24	75	7.30	34.24	26.80
103	5.10	34.07	100	5.25	34.09	26.94
156	6.35	34.51	150	6.25	34.46	27.12
207	6.81	34.74	200	6.80	34.72	27.25
310	5.35	34.82	300	5.50	34.81	27.49
348	5.21	34.84	400	4.95	34.87	27.60
528	4.61	34.94	600	4.50	34.94	27.70
711	-------	34.93	800	4.10	34.92	27.74
929	-------	34.92	1,000	3.90	34.92	27.76
1,389	3.72	34.95	-------	-------	-------	-------

Station 3859; 14 May; latitude 42°53′ N., longitude 47°30′ W.; depth 3663 meters; dynamic height 971.174

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	13.89	35.56	0	13.89	35.56	26.67
25	13.63	35.66	25	13.63	35.66	26.80
49	-------	-------	50	13.30	35.69	26.88
74	13.05	35.70	75	13.05	35.70	26.94
98	13.04	35.70	100	13.05	35.70	26.94
148	13.04	35.70	150	13.05	35.70	26.94
197	12.99	35.69	200	12.95	35.69	26.95
295	10.58	35.31	300	10.50	35.30	27.12
395	8.12	35.04	400	8.00	35.03	27.31
586	5.04	34.95	600	4.95	34.95	27.66
774	4.44	-------	800	4.35	34.94	27.72
899	-------	-------	(1,000)	3.95	34.93	27.75
1,091	-------	-------	-------	-------	-------	-------

Station 3860; 15 May; latitude 43°08′ N., longitude 48°06′ W.; depth 3402 meters; dynamic height 971.143

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	14.25	35.33	0	14.25	35.33	26.41
25	15.21	35.93	25	15.21	35.93	26.67
50	14.95	35.88	50	14.95	35.88	26.67
75	14.61	35.83	75	14.61	35.83	26.71
100	13.51	35.64	100	13.51	35.64	26.80
150	12.02	35.41	150	12.02	35.41	26.92
200	11.51	35.41	200	11.51	35.41	27.02
300	8.03	34.99	300	8.03	34.99	27.28
225	10.96	35.34	400	6.45	34.96	27.48
338	7.18	34.94	600	5.35	35.02	27.67
450	6.04	34.98	800	4.35	34.96	27.74
567	5.52	35.02	(1,000)	3.95	34.94	27.76
870	4.13	34.95	-------	-------	-------	-------

Station 3861; 15 May; latitude 43°18.5′ N., longitude 48°45′ W.; depth 2652 meters; dynamic height 970.961

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.50	33.50	0	6.50	33.50	26.33
25	9.10	34.40	25	9.10	34.40	26.65
50	4.68	33.91	50	4.68	33.91	26.87
75	3.69	34.09	75	3.69	34.09	27.11
99	3.74	34.27	100	3.75	34.28	27.26
150	3.67	34.47	150	3.67	34.47	27.42
200	4.19	34.65	200	4.19	34.65	27.51
299	4.19	34.81	300	4.20	34.81	27.64
373	4.34	34.90	400	4.35	34.90	27.69
564	4.13	34.90	600	4.10	34.90	27.72
759	3.90	34.935	800	3.85	34.93	27.76
962	3.77	34.92	1,000	3.75	34.92	27.77
1,485	3.54	34.93	-------	-------	-------	-------

Station 3862; 15 May; latitude 43°18.5′ N., longitude 50°15′ W.; depth 62 meters; dynamic height 971.038

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.63	33.13	0	6.63	33.13	26.00
25	4.21	33.30	25	4.21	33.30	26.43
50	2.07	33.42	50	2.07	33.42	26.74

Station 3863; 15 May; latitude 43°01′ N., longitude 50°15′ W.; depth 100 meters; dynamic height 971.036

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.98	32.92	0	4.98	32.92	26.05
25	1.17	33.06	25	1.17	33.06	26.50
50	−0.26	33.26	50	−0.26	33.26	26.73
80	−0.58	33.35	75	−0.55	33.34	26.81

Station 3864; 15 May; latitude 42°53′ N., longitude 50°13′ W.; depth 356 meters; dynamic height 971.034

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.77	32.80	0	3.77	32.80	26.09
25	2.94	33.16	25	2.94	33.16	26.44
50	0.82	33.19	50	0.82	33.19	26.63
75	−0.47	33.39	75	−0.47	33.39	26.85
100	−0.64	33.47	100	−0.64	33.47	26.93
150	−0.24	33.62	150	−0.24	33.62	27.03
200	0.99	33.95	200	0.99	33.95	27.22
300	3.24	34.64	300	3.24	34.64	27.59

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t

Station 3865; 16 May; latitude 42°45′ N., longitude 50°12′ W.; depth 1463 meters; dynamic height 971.006

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.63	33.00	0	3.63	33.00	26.25
25	3.32	33.11	25	3.32	33.11	26.37
49	7.64	34.26	50	7.60	34.28	26.78
74	6.68	34.42	75	6.55	34.42	27.05
99	4.97	34.22	100	5.00	34.22	27.08
148	6.25	34.52	150	6.20	34.52	27.17
198	4.17	34.46	200	4.10	34.46	27.37
297	3.35	34.65	300	3.35	34.66	27.60
376	3.96	34.81	400	3.95	34.82	27.67
570	3.77	34.88	600	3.80	34.89	27.74
768	3.94	34.94	800	3.85	34.91	27.75
961	3.74	34.90	1,000	3.75	34.90	27.75
1,348	3.71	34.92				

Station 3866; 16 May; latitude 42°27′ N., longitude 50°14′ W.; depth 2798 meters; dynamic height 971.046

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	8.13	33.26	0	8.13	33.26	25.91
24	4.10	33.37	25	4.10	33.44	26.56
48	9.94	34.88	50	9.95	34.91	26.91
72	9.71	34.99	75	9.65	34.99	27.02
96	9.01	34.94	100	8.75	34.93	27.12
143	6.86	34.72	150	6.80	34.73	27.25
191	6.50	34.78	200	6.40	34.80	27.36
287	5.89	34.92	300	5.70	34.91	27.54
380	5.75	34.88	400	5.20	34.95	27.63
426	5.09	34.95	600	4.55	34.97	27.73
575	4.55	34.96	800	4.75	35.06	27.77
740	4.96	35.07	1,000	4.15	34.99	27.78
1,189	3.94	34.965				

Station 3867; 16 May; latitude 41°59.5′ N., longitude 50°15′ W.; depth 3658 meters; dynamic height 970.974

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	7.63	33.38	0	7.63	33.38	26.08
27	5.13	33.58	25	5.30	33.57	26.53
53	4.28	33.88	50	4.40	33.84	26.84
80	3.48	33.92	75	3.60	33.91	26.98
106	3.27	34.03	100	3.30	34.00	27.08
160	3.64	34.32	150	3.55	34.26	27.26
213	4.15	34.58	200	4.05	34.52	27.42
319	3.89	34.79	300	3.95	34.76	27.62
437	3.69	34.87	400	3.70	34.85	27.72
654	3.59	34.89	600	3.60	34.89	27.76
871	3.54	34.90	800	3.55	34.90	27.77
1,089	3.61	34.92	1,000	3.60	34.91	27.78
1,634	3.38	34.93				

Station 3868; 16 May; latitude 42°00′ N., longitude 49°28′ W.; depth 3292 meters; dynamic height 970.987

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	7.20	33.07	0	7.20	33.07	25.89
26	3.82	33.34	25	3.85	33.33	26.49
51	3.10	33.88	50	3.10	33.85	26.98
77	4.48	34.26	75	4.45	34.25	27.16
103	3.88	34.31	100	3.95	34.30	27.26
153	5.30	34.60	150	5.30	34.59	27.33
204	3.44	34.41	200	3.50	34.45	27.42
307	4.84	34.82	300	4.75	34.81	27.58
396	4.25	34.84	400	4.20	34.84	27.66
593	3.94	34.90	600	3.95	34.90	27.73
791	3.81	34.90	800	3.75	34.90	27.75
995	3.62	34.89	1,000	3.60	34.89	27.76
1,545	3.64	34.925				

Station 3869; 16 May; latitude 41°31′ N., longitude 49°02′ W.; depth 3036 meters; dynamic height 971.166

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	12.47	34.02	0	12.47	34.02	25.76
27	4.59	33.40	25	4.75	33.42	26.48
53	10.03	34.71	50	9.20	34.53	26.73
79	12.39	35.34	75	12.35	35.30	26.77
105	12.29	35.29	100	12.35	35.30	26.77
159	9.84	34.93	150	10.25	35.00	26.93
211	7.34	34.67	200	7.90	34.71	27.08
316	6.64	34.77	300	6.80	34.76	27.28
443	3.70	34.52	400	4.60	34.59	27.41
665	4.72	34.935	600	4.40	34.84	27.63
1,109	3.82	34.92	800	4.40	34.93	27.70
1,665	3.60	34.93	1,000	3.95	34.92	27.75

Station 3870; 17 May; latitude 42°02′ N., longitude 47°54′ W.; depth 3713 meters; dynamic height 970.988

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	9.55	33.72	0	9.55	33.72	26.05
23	9.56	34.42	25	9.50	34.44	26.62
46	8.27	34.60	50	8.20	34.62	26.97
69	7.95	34.68	75	7.70	34.66	27.07
93	6.92	34.59	100	6.75	34.60	27.16
138	6.06	34.63	150	5.80	34.63	27.30
184	5.12	34.62	200	5.15	34.66	27.41
277	5.62	34.94	300	5.55	34.96	27.60
385	5.14	34.98	400	5.10	34.98	27.66
579	4.55	34.98	600	4.50	34.98	27.73
774	4.13	34.96	800	4.05	34.96	27.77
973	3.89	34.96	1,000	3.85	34.96	27.79
1,478	3.63	34.95				

Station 3871; 17 May; latitude 42°21′ N., longitude 48°32′ W.; depth 3329 meters; dynamic height 970.958

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.43	32.69	0	6.43	32.69	25.70
28	5.31	33.80	25	5.40	33.67	26.60
55	4.82	34.23	50	4.95	34.21	27.08
83	3.61	34.24	75	3.90	34.24	27.21
110	4.85	34.45	100	4.35	34.37	27.27
166	5.50	34.74	150	5.40	34.68	27.39
221	5.40	34.86	200	5.45	34.83	27.50
331	4.94	34.94	300	5.05	34.92	27.63
431	4.71	34.98	400	4.80	34.97	27.70
586	4.20	34.95	600	4.15	34.95	27.75
702	3.88	34.94	800	3.75	34.93	27.77
851	3.78	34.93	1,000	3.75	34.93	27.77
1,176	3.70	34.935				

Station 3872; 17 May; latitude 42°41′ N., longitude 49°10′ W.; depth 2232 meters; dynamic height 970.991

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	10.76	33.95	0	10.76	33.95	26.02
28	11.69	35.26	25	11.60	35.11	26.77
55	12.38	35.53	50	12.30	35.51	26.95
83	11.20	35.30	75	11.55	35.36	26.97
109	10.69	35.26	100	10.85	35.28	27.04
165	4.25	34.34	150	6.00	34.57	27.24
220	5.65	34.81	200	5.15	34.65	27.40
329	5.25	34.92	300	5.40	34.91	27.58
418	4.52	34.91	400	4.65	34.91	27.67
629	3.82	34.90	600	3.85	34.90	27.74
842	3.80	34.92	800	3.80	34.92	27.77
1,055	3.58	34.91	1,000	3.60	34.91	27.78
1,594	3.58	34.945				

STATIONS OCCUPIED IN 1949—Continued

Station 3873; 3 June; latitude 47°24′ N., longitude 50°00′ W.; depth 92 meters; dynamic height 971.032

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.42	33.05	0	3.42	33.05	26.32
25	3.25	33.03	25	3.25	33.03	26.31
49	2.05	33.19	50	1.95	33.19	26.55
74	0.32	33.41	75	0.25	33.41	26.84

Station 3874; 3 June; latitude 47°42′ N., longitude 49°52′ W.; depth 117 meters; dynamic height 971.032

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	2.72	32.79	0	2.72	32.79	26.11
25	1.56	32.98	25	1.56	32.98	26.41
50	1.64	33.13	50	1.64	33.13	26.52
75	0.17	33.43	75	0.17	33.43	26.86
100	0.08	33.46	100	0.08	33.46	26.89

Station 3875; 3 June; latitude 47°59′ N., longitude 49°50′ W.; depth 172 meters; dynamic height 971.027

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	2.64	32.89	0	2.64	32.89	26.26
25	0.85	33.01	25	0.85	33.01	26.49
51	0.38	33.18	50	0.40	33.18	26.64
76	−1.48	33.29	75	−1.45	33.29	26.80
101	−1.06	33.44	100	−1.10	33.43	26.91
152	0.14	33.70	150	0.10	33.69	27.06

Station 3876; 3 June; latitude 48°14′ N., longitude 49°43′ W.; depth 225 meters; dynamic height 971.029

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	2.19	32.94	0	2.19	32.94	26.33
25	1.41	33.33	25	1.41	33.00	26.44
50	−0.90	33.16	50	−0.90	33.16	26.69
75	−1.62	33.29	75	−1.62	33.29	26.80
100	−1.63	33.34	100	−1.63	33.34	26.85
150	−0.70	33.59	150	−0.70	33.59	27.02
200	0.85	33.94	200	0.85	33.94	27.22

Station 3877; 3 June; latitude 48°32′ N., longitude 49°35′ W.; depth 703 meters; dynamic height 970.922

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	1.58	33.12	0	1.58	33.12	26.52
25	−0.02	33.76	25	−0.02	33.76	27.13
50	0.95	33.95	50	0.95	33.95	27.22
75	1.53	34.11	75	1.53	34.11	27.31
100	1.81	34.21	100	1.81	34.21	27.38
150	1.81	34.29	150	1.81	34.29	27.44
200	2.11	34.42	200	2.11	31.42	27.52
300	2.58	34.56	300	2.58	34.55	27.59
398	3.23	34.75	400	3.25	34.75	27.68
596	3.38	31.84	600	3.40	34.84	27.74

Station 3878; 4 June; latitude 48°43′ N., longitude 49°30′ W.; depth 1161 meters; dynamic height 970.924

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	1.17	33.37	0	1.17	33.37	26.75
25	1.01	33.36	25	1.01	33.36	26.75
50	0.09	33.48	50	0.09	33.48	26.90
75	0.24	33.81	75	0.24	33.81	27.16
100	0.61	33.99	100	0.61	33.99	27.27
150	1.33	34.25	150	1.33	34.25	27.44
200	2.15	34.47	200	2.15	34.47	27.56
300	2.93	34.69	300	2.93	34.69	27.67
383	3.46	34.80	400	3.50	34.81	27.71
576	3.51	34.86	600	3.50	34.87	27.76
770	3.50	34.89	800	3.50	34.89	27.77
1,068	3.47	34.91	1,000	3.45	34.91	27.79

Station 3879; 4 June; latitude 49°12.5′ N., longitude 49°15′ W.; depth 1639 meters; dynamic height 970.831

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.70	34.46	0	3.70	34.46	27.41
24	3.55	34.46	25	3.50	34.46	27.43
47	3.14	34.51	50	3.10	34.51	27.51
71	3.06	34.55	75	3.00	34.56	27.57
94	2.68	34.61	100	2.70	34.63	27.64
141	3.30	34.76	150	3.30	34.77	27.70
188	3.35	34.80	200	3.35	34.81	27.72
282	3.34	34.81	300	3.35	34.84	27.74
316	3.31	34.85	400	3.35	34.85	27.75
485	3.32	34.85	600	3.35	34.85	27.75
662	3.35	34.85	800	3.40	34.87	27.77
812	3.43	34.87	1,000	3.45	34.89	27.77
1,316	3.47	34.93	-------	-------	-------	-------

Station 3880; 4 June; latitude 49°41′ N., longitude 49°04′ W.; depth 1785 meters; dynamic height 970.801

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.93	34.64	0	3.93	34.64	27.52
24	3.91	34.67	25	3.90	34.67	27.56
48	2.99	34.62	50	3.00	34.62	27.61
72	3.27	34.70	75	3.25	34.70	27.64
95	3.03	34.71	100	3.00	34.71	27.68
144	3.02	34.77	150	3.05	34.78	27.73
192	3.23	34.83	200	3.25	34.84	27.75
287	3.26	34.85	300	3.30	34.85	27.76
301	3.28	34.85	400	3.30	34.86	27.77
468	3.30	34.86	600	3.30	34.87	27.78
647	3.30	34.88	800	3.30	34.89	27.79
830	3.34	34.89	1,000	3.35	34.90	27.79
1,324	3.44	34.93	-------	-------	-------	-------

Station 3881; 4 June; latitude 50°00′ N., longitude 49°02′ W.; depth 1866 meters; dynamic height 970.816

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	4.50	34.62	0	4.50	34.62	27.45
25	4.49	34.61	25	4.49	34.61	27.44
50	3.86	34.63	50	3.86	34.63	27.53
75	3.32	34.67	75	3.32	34.67	27.62
100	3.01	34.68	100	3.01	34.68	27.66
150	3.33	34.80	150	3.33	34.80	27.71
200	3.57	34.87	200	3.57	34.87	27.75
299	3.51	34.87	300	3.55	34.87	27.75
301	3.54	34.875	400	3.45	34.87	27.76
470	3.37	34.875	600	3.35	34.88	27.77
648	3.37	34.875	800	3.40	34.89	27.78
835	3.44	34.895	1,000	3.40	34.90	27.79
1,343	3.42	31.925	-------	-------	-------	-------

Station 3882; 4 June; latitude 49°49′ N., longitude 49°30′ W.; depth 1320 meters; dynamic height 970.830

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.36	33.93	0	2.36	33.93	27.11
26	3.28	34.37	25	3.25	34.36	27.37
52	1.89	34.41	50	1.90	34.40	27.52
78	2.64	34.58	75	2.55	34.57	27.61
104	2.85	34.64	100	2.85	34.63	27.63
156	2.99	34.69	150	2.95	34.69	27.66
208	3.16	34.78	200	3.15	34.77	27.71
312	3.33	34.83	300	3.35	34.83	27.74
375	3.48	34.86	400	3.40	34.86	27.76
575	3.38	34.87	600	3.40	34.87	27.77
781	3.35	34.87	800	3.35	34.87	27.77
980	3.37	34.87	1,000	3.35	34.87	27.77
1,320	3.42	34.91				

Station 3883; 4 June; latitude 49°39′ N., longitude 50°02′ W.; depth 653 meters; dynamic height 970.861

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.05	33.98	0	2.05	33.98	27.18
25	1.63	34.13	25	1.63	34.13	27.33
50	1.65	34.33	50	1.65	34.33	27.49
75	1.83	34.38	75	1.83	34.38	27.51
100	2.08	34.47	100	2.08	34.47	27.56
149	2.64	34.62	150	2.65	34.62	27.64
199	2.94	34.69	200	2.95	34.69	27.66
299	3.11	34.76	300	3.10	34.76	27.71
393	3.19	34.77	400	3.20	34.77	27.71
592	3.34	34.84	(600)	3.35	34.84	27.74

Station 3884; 5 June; latitude 49°28′ N., longitude 50°34′ W.; depth 324 meters; dynamic height 970.948

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.70	33.19	0	1.70	33.19	26.57
24	1.34	33.33	25	1.35	33.33	26.70
47	−1.06	33.31	50	−1.10	33.35	26.84
71	−0.88	33.59	75	−0.70	33.62	27.05
94	0.26	33.81	100	0.50	33.88	27.20
142	2.24	34.24	150	2.20	34.27	27.40
189	1.90	34.35	200	2.00	34.38	27.50
283	2.89	34.66	(300)	3.05	34.72	27.68

Station 3885; 5 June; latitude 49°23′ N., longitude 51°03′ W.; depth 346 meters; dynamic height 970.923

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.98	33.37	0	1.98	33.37	26.69
24	1.89	33.37	25	1.85	33.38	26.71
49	0.11	33.62	50	0.10	33.63	27.02
73	0.26	33.92	75	0.30	33.91	27.25
97	1.17	34.15	100	1.30	34.17	27.38
146	2.25	34.35	150	2.30	34.36	27.46
195	2.47	34.49	200	2.50	34.51	27.56
292	3.19	34.75	(300)	3.25	31.77	27.70

Station 3386; 5 June; latitude 49°13.5 N., longitude 51°36′ W. Depth 315; dynamic height 970.981.

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.78	32.61	0	1.78	32.68	26.16
23	1.31	32.97	25	1.25	32.99	25.44
47	0.85	33.24	50	0.80	33.28	26.70
70	0.47	33.51	75	0.45	33.57	26.95
93	0.53	33.67	100	0.50	33.71	27.06
140	0.25	33.98	150	0.45	34.03	27.32
186	1.29	31.19	200	1.55	34.26	27.43
279	2.72	31.55	(300)	3.00	34.63	27.62

Station 3887; 5 June; latitude 49°06′ N., longitude 51°54′ W.; depth 287 meters, dynamic height 971.041

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.13	32.32	0	2.13	32.32	25.84
25	−0.85	32.78	25	−0.85	32.78	26.37
50	−1.55	33.16	50	−1.55	33.16	26.70
75	−1.69	33.25	75	−1.69	33.25	26.78
100	−1.73	33.32	100	−1.73	33.32	26.83
150	−1.35	33.43	150	−1.35	33.43	26.92
199	−0.71	33.67	200	−0.65	33.68	27.10
279	2.01	34.31				

Station 3888; 5 June; latitude 49°01′ N., longitude 52°08′ W.; depth 269 meters, dynamic height 971.043

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.62	32.22	0	2.62	32.22	25.73
23	0.18	32.92	25	0.10	32.95	26.48
46	−1.53	33.20	50	−1.60	33.22	26.75
69	−1.64	33.27	75	−1.65	33.29	26.80
92			100	−1.55	33.34	26.85
138	−1.34	33.41	150	−1.30	33.47	26.95
183	−0.97	33.59	200	−0.45	33.68	27.09
275	1.62	34.17				

Station 3889; 5 June; latitude 48°55′ N., longitude 52°25′ W.; depth 369 meters, dynamic height 971.050

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.72	32.58	0	2.72	32.58	26.00
24	1.51	32.83	25	1.45	32.84	26.31
47	−1.12	33.12	50	−1.25	33.14	26.67
71	−1.59	33.22	75	−1.60	33.23	26.76
95	−1.64	33.29	100	−1.65	33.30	26.81
142	−1.48	33.39	150	−1.40	33.41	26.90
189	−0.86	33.57	200	−0.65	33.63	27.06
284	1.31	34.12	(300)	1.65	34.21	27.39

Station 3890; 5 June; latitude 48°50′ N., longitude 52°43′ W.; depth 230 meters; dynamic height 971.080

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.09	32.25	0	4.09	32.25	25.61
24	1.50	32.45	25	1.40	32.51	26.04
47	−1.42	33.07	50	−1.45	33.10	26.64
71	−1.58	33.21	75	−1.60	33.22	26.75
95	−1.63	33.27	100	−1.65	33.28	26.80
142	−1.59	33.33	150	−1.55	33.34	26.85
189	−1.30	33.43	(200)	−1.20	33.46	26.94

Station 3891; 5 June; latitude 48°49′ N., longitude 52°46′ W.; depth 199 meters; dynamic height 971.078

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.34	32.15	0	4.34	32.15	25.51
23	0.51	32.57	25	0.40	32.62	26.20
45	−0.46	33.05	50	−0.70	33.11	26.63
68	−1.54	33.19	75	−1.55	33.21	26.74
91	−1.60	33.24	100	−1.60	33.25	26.77
136	−1.67	33.32	(150)	−1.70	33.35	26.85
			(200)	−1.25	33.46	26.94

Station 3892; 5 June; latitude 48°44′ N., longitude 52°58′ W.; depth 112 meters; dynamic height 971.099

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	4.75	32.03	0	4.75	32.03	25.38
27	0.97	32.46	25	1.20	32.43	26.00
52	−0.31	32.73	50	−0.20	32.70	26.28
79	−1.34	33.04	75	−1.20	33.01	26.57
			(100)	−1.60	33.21	26.74

Station 3893; 5 June; latitude 48°39′ N., longitude 52°43′ W.; depth 256 meters; dynamic height 971.086

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.90	32.10	0	3.90	32.10	25.51
25	1.55	32.68	25	1.55	32.68	26.17
50	−0.50	32.89	50	−0.50	32.89	26.15
75	−1.18	33.12	75	−1.18	33.12	26.66
100	−1.61	33.23	100	−1.61	33.23	26.76
150	−1.56	33.29	150	−1.56	33.29	26.80
200	−1.24	33.49	200	−1.24	33.49	26.96

Station 3894; 5 June; latitude 48°35.5′ N., longitude 52°32′ W.; depth 222 meters; dynamic height 971.089

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	2.93	32.45	0	2.93	32.45	25.88
22	2.53	32.51	25	2.40	32.54	26.00
43	1.27	32.87	50	0.80	32.92	26.41
65	−0.27	33.03	75	−0.90	33.10	26.63
86	−1.33	33.16	100	−1.50	33.20	26.73
129	−1.59	33.27	1500	−1.55	33.32	26.83
172	−1.46	33.37	(200)	−1.35	33.43	26.92

Station 3895; 6 June; latitude 48°22′ N., longitude 52°05′ W.; depth 177 meters; dynamic height 971.070

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.27	32.71	0	3.27	32.71	26.06
28	2.80	32.75	25	2.85	32.74	26.12
55	−0.36	32.97	50	0.80	32.94	26.43
83	−1.38	33.24	75	−1.20	33.16	26.69
110	−1.55	33.32	100	−1.50	33.29	26.80
166	−0.18	33.63	150	−0.65	33.53	26.98

Station 3896; 6 June; latitude 48°15′ N., longitude 51°52′ W.; depth 187 meters; dynamic height 971.061

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.10	32.74	0	3.10	32.74	26.10
28	1.50	32.79	25	1.75	32.78	26.24
57	−1.24	33.07	50	−0.75	33.01	26.56
85	−1.45	33.29	75	−1.40	33.24	26.76
113	−1.46	33.38	100	−1.45	33.31	26.81
170	−0.09	33.64	150	−0.65	33.52	26.97

Station 3897; 6 June; latitude 48°04′ N., longitude 51°25′ W.; depth 170 meters; dynamic height 971.053

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	2.96	32.74	0	2.96	32.74	26.11
25	2.22	32.81	25	2.22	32.81	26.23
49	0.33	32.93	50	0.30	32.94	26.46
74	−0.95	33.22	75	−0.95	33.23	26.74
99	−0.67	33.46	100	−0.65	33.48	26.91
143	0.14	33.69	(150)	0.30	33.72	27.08

Station 3896; 6 June; latitude 47°56′ N., longitude 51°06′ W.; depth 144 meters; dynamic height 971.052

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.05	32.81	0	3.05	32.81	26.17
25	2.36	32.89	25	2.36	32.89	26.28
50	0.11	32.98	50	0.11	32.98	26.50
74	−1.25	33.24	75	−1.25	33.25	26.76
104	−0.45	33.47	100	−0.60	33.44	26.89

Station 3899; 6 June; latitude 47°48′ N., longitude 50°45′ W.; depth 115 meters; dynamic height 971.039

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	2.86	32.85	0	2.86	32.85	26.21
25	2.48	32.86	25	2.48	32.86	26.25
50	−1.06	33.28	50	−1.06	33.28	26.78
74	−1.45	33.37	75	−1.45	33.37	26.86
99	−0.64	33.52	100	−0.55	33.53	26.97

Station 3900; 6 June; latitude 47°38.5′ N., longitude 50°25′ W.; depth 121 meters; dynamic height 971.045

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.17	32.89	0	3.17	32.89	26.22
25	2.41	32.91	25	2.41	32.91	26.29
50	0.82	33.08	50	0.82	33.08	26.54
75	−0.11	33.40	75	−0.11	33.40	26.84
100	−0.10	33.50	100	−0.10	33.50	26.92

Station 3901; 6 June; latitude 47°32′ N., longitude 50°15′ W.; depth 102 meters; dynamic height 971.042

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.33	32.97	0	3.33	32.97	26.26
25	2.86	32.99	25	2.86	32.99	26.32
51	1.00	33.21	50	1.05	33.20	26.63
76	0.07	33.46	75	0.10	33.45	26.88
86	0.07	33.44				

Station 3902; 6 June; latitude 47°24′ N., longitude 50°00′ W.; depth 95 meters; dynamic height 971.041

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.59	33.02	0	3.59	33.02	26.28
25	3.30	33.04	25	3.30	33.04	26.32
50	1.56	33.25	50	1.56	33.25	26.63
75	−0.08	33.51	75	−0.08	33.50	26.92
85	−0.06	33.50				

Station 3903; 17 June; latitude 47°25′ N., longitude 50°00′ W.; depth 97 meters; dynamic height 971.037

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.95	32.98	0	3.95	32.98	26.20
24	3.81	32.975	25	3.80	32.98	26.22
48	1.32	33.26	50	1.25	33.28	26.67
72	0.40	33.40	75	0.35	33.41	26.83

Station 3904; 17 June; latitude 47°44′ N., longitude 49°54′ W.; depth 111 meters; dynamic height 971.049

Observed values: Depth, meters	Observed values: Temperature, °C.	Observed values: Salinity, ‰	Scaled values: Depth, meters	Scaled values: Temperature, °C.	Scaled values: Salinity, ‰	σ_t
0	3.66	32.865	0	3.66	32.865	26.15
25	3.32	32.87	25	3.32	32.87	26.18
50	2.52	32.94	50	2.52	32.94	26.31
75	0.28	33.36	75	0.28	33.36	26.79
100	0.03	33.47	100	0.03	33.47	26.90

Station 3905; 17 June; latitude 48°00′ N., longitude 49°54′ W.; depth 170 meters; dynamic height 971.041

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.32	32.91	0	3.32	32.94	26.24
23	2.62	32.96	25	2.55	32.96	26.32
46	0.66	33.03	50	0.30	33.08	26.57
69	−1.30	33.28	75	−1.40	33.30	26.80
92	−1.60	33.36	100	−1.55	33.39	26.89
138	−0.42	33.57	(150)	0.00	33.62	27.02

Station 3906; 17 June; latitude 48°14′ N., longitude 49°42′ W.; depth 221 meters; dynamic height 971.031

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.45	33.12	0	2.45	33.12	26.45
25	1.67	33.18	25	1.67	33.18	26.56
49	0.56	33.18	50	0.40	33.18	26.64
74	−1.44	33.28	75	−1.45	33.28	26.79
99	−1.61	33.35	100	−1.60	33.36	26.86
149	−0.96	33.52	150	−0.95	33.52	26.98
198	−0.40	33.68	(200)	−0.40	33.69	27.09

Station 3907; 17 June; latitude 48°33′ N., longitude 49°30′ W.; depth 622 meters; dynamie height 970.959

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.76	33.26	0	2.76	33.26	26.54
25	1.27	33.28	25	1.27	33.28	26.67
49	0.32	33.42	50	0.25	33.42	26.85
75	−0.95	33.55	75	−0.95	33.55	27.00
99	−0.69	33.70	100	−0.65	33.71	27.12
149	1.30	34.08	150	1.40	34.08	27.30
199	1.85	34.33	200	1.85	34.34	27.47
297	2.63	34.62	300	2.65	34.63	27.64
360	3.07	34.735	400	3.20	34.76	27.70
561	3.37	34.845	(600)	3.40	34.86	27.76

Station 3908; 18 June; latitude 48°42′ N., longitude 49°23′ W.; depth 1134 meters; dynamic height 970.910

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.54	33.40	0	2.54	33.40	26.67
22	1.74	33.56	25	1.55	33.59	26.90
43	−0.19	33.80	50	0.00	33.84	27.19
65	0.41	33.91	75	0.50	33.97	27.27
86	0.55	34.015	100	0.65	34.06	27.33
129	0.89	34.15	150	1.20	34.24	27.44
172	1.59	34.34	200	2.05	34.47	27.57
258	3.01	34.73	300	3.15	34.76	27.70
311	3.14	34.76	400	3.20	34.78	27.71
481	3.27	34.80	600	3.30	34.82	27.74
665	3.32	34.84	800	3.40	34.87	27.77
858	3.48	34.88	(1,000)	3.60	34.90	27.77

Station 3909; 18 June; latitude 49°06.5′ N.; longitude 49°16′ W.; depth 1641 meters; dynamic height 970.813

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.90	34.62	0	4.90	34.62	27.41
24	4.37	34.62	25	4.35	34.62	27.47
48	4.33	34.61	50	4.30	34.61	27.47
72	3.55	34.64	75	3.50	34.65	27.58
96	3.35	34.72	100	3.30	34.73	27.66
144	3.00	34.74	150	3.00	34.75	27.71
192	3.21	34.815	200	3.20	34.82	27.75
288	3.30	34.86	300	3.30	34.85	27.76
359	3.31	34.85	400	3.35	34.86	27.76
549	3.32	34.865	600	3.30	34.87	27.78
746	3.32	34.88	800	3.30	34.88	27.78
947	3.34	34.88	1,000	3.35	34.885	27.78
1,170	3.47	34.925	-------	-------	-------	-------

Station 3910; 18 June; latitude 49°33′ N., longitude 49°16′ W.; depth 1609 meters; dynamic height 970.811

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.64	34.66	0	5.64	34.66	27.35
22	4.56	34.64	25	4.55	34.64	27.47
42	4.57	34.65	50	4.50	34.65	27.47
61	4.33	34.65	75	3.80	34.65	27.55
85	3.27	34.65	100	3.15	34.67	27.63
128	3.08	34.71	150	3.10	34.75	27.70
170	3.11	34.78	200	3.20	34.81	27.74
255	3.31	34.85	300	3.30	34.86	27.77
366	3.32	34.87	400	3.35	34.87	27.77
587	3.32	34.88	600	3.30	34.88	27.78
834	3.33	34.88	800	3.30	34.88	27.78
1,047	3.35	34.88	1,000	3.35	34.88	27.78
1,575	3.35	34.935	-------	-------	-------	-------

Station 3911; 18 June; latitude 49°58.5′ N., longitude 49°02′ W.; depth 1796 meters; dynamic height 970.809

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.74	34.61	0	4.74	34.61	27.42
26	3.94	34.62	25	3.95	34.62	27.51
51	3.92	34.61	50	3.90	34.61	27.51
77	3.04	34.68	75	3.10	34.68	27.64
103	2.98	34.69	100	3.00	34.69	27.66
154	3.05	34.77	150	3.05	34.76	27.71
206	3.17	34.82	200	3.15	34.81	27.74
309	3.27	34.85	300	3.25	34.85	27.76
450	3.31	34.87	400	3.30	34.86	27.77
656	3.32	34.87	600	3.30	34.87	27.78
862	3.32	34.88	800	3.30	34.88	27.78
1,065	3.31	34.89	1,000	3.35	34.89	27.78
1,572	3.34	34.93	-------	-------	-------	-------

Station 3912; 18 June; latitude 49°49′ N.; longitude 49°31′ W.; depth 1333 meters; dynamic height 970.825

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.86	34.32	0	4.86	34.32	27.18
25	4.82	34.33	25	4.82	34.33	27.18
49	3.45	34.52	50	3.45	34.52	27.48
71	3.25	34.68	75	3.25	34.68	27.62
99	3.13	34.70	100	3.15	34.70	27.65
148	3.25	34.78	150	3.25	34.78	27.70
197	3.18	34.82	200	3.20	34.82	27.75
296	3.32	34.84	300	3.30	34.84	27.75
391	3.33	34.84	400	3.30	34.84	27.75
589	3.31	34.87	600	3.30	34.87	27.78
788	3.32	34.875	800	3.30	34.88	27.78
985	3.31	34.88	1,000	3.35	34.88	27.78
1,281	3.45	34.915	-------	-------	-------	-------

Station 3913; 18–19 June; latitude 49°38.5′ N., longitude 50°04′ W.; depth 625 meters; dynamie height 970.865

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.55	33.57	0	2.55	33.57	26.81
25	2.11	33.68	25	2.11	33.68	26.93
50	0.69	34.07	50	0.69	34.07	27.34
75	1.13	34.22	75	1.13	34.22	27.43
100	1.62	34.37	100	1.62	34.37	27.52
150	2.46	34.51	150	2.46	34.54	27.58
200	2.88	34.68	200	2.88	34.68	27.66
300	3.19	34.79	300	3.19	34.79	27.72
396	3.29	34.82	400	3.30	34.82	27.74
598	3.43	34.89	(600)	3.45	34.89	27.77

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, °/₀₀	Depth, meters	Temperature, °C.	Salinity, °/₀₀	σ_t

Station 3914; 19 June; latitude 49°29′ N.; longitude 50°38′ W.; depth 333 meters; dynamic height 970.913

0	3.19	33.25	0	3.19	33.25	26.50
25	2.08	33.26	25	2.08	33.26	26.59
49	−0.32	33.64	50	−0.30	33.64	27.05
74	−0.07	33.81	75	0.00	33.81	27.17
98	0.79	34.00	100	0.80	34.01	27.28
147	1.39	34.24	150	1.40	34.24	27.43
196	2.06	34.46	200	2.10	34.48	27.56
294	3.12	34.76	(300)	3.20	34.77	27.71

Station 3915; 19 June; latitude 49°19′ N.; longitude 51°07′ W.; depth 334 meters; dynamic height 970.947

0	3.55	32.78	0	3.55	32.78	26.09
25	1.15	32.91	25	1.15	32.91	26.38
50	0.79	33.28	50	0.79	33.28	26.70
75	−0.15	33.53	75	−0.15	33.53	26.95
100	0.16	33.82	100	0.16	33.82	27.17
150	1.02	34.18	150	1.02	34.18	27.40
200	1.49	34.32	200	1.49	34.32	27.49
			(300)	2.80	34.72	27.70

Station 3916; 19 June; latitude 49°08′ N., longitude 51°36′ W.; depth 305 meters; dynamic height 970.990

0	3.80	32.50	0	3.80	32.50	25.84
24	1.56	32.56	25	1.50	32.56	26.08
48	−0.80	33.24	50	−0.85	33.25	26.74
73	−0.85	33.32	75	−0.90	33.33	26.82
97	−1.37	33.44	100	−1.35	33.45	26.93
145	−0.60	33.71	150	−0.45	33.75	27.14
194	1.65	34.22	200	1.75	34.25	27.41
281	2.75	34.56	(300)	2.90	34.63	27.62

Station 3917; 19 June; latitude 49°02′ N., longitude 51°56′ W.; depth 308 meters; dynamic height 971.022

0	3.50	32.50	0	3.50	32.50	25.86
24	2.20	32.56	25	2.15	32.57	26.04
49	−1.38	33.10	50	−1.40	33.11	26.65
74	−1.39	33.23	75	−1.40	33.23	26.75
98	−1.62	33.30	100	−1.60	33.30	26.81
147	−1.18	33.56	150	−1.10	33.48	26.94
196	0.07	33.89	200	0.15	33.93	27.25
284	2.54	34.46	(300)	2.90	34.51	27.55

Station 3918; 19 June; latitude 48°58′ N., longitude 52°10′ W.; depth 302 meters; dynamic height 971.031

0	5.01	32.19	0	5.04	32.19	25.46
25	0.31	32.80	25	0.31	32.80	26.34
49	−1.15	33.16	50	−1.15	33.17	26.70
74	−1.58	33.24	75	−1.60	33.24	26.76
99	−1.62	33.29	100	−1.60	33.29	26.80
148	−1.50	33.39	150	−1.45	33.40	26.89
198	−0.95	32.65	200	−0.90	33.67	27.10
287	2.35	31.42	(300)	2.90	34.52	27.54

Station 3919; 19 June; latitude 48°52′ N., longitude 52°29′ W.; depth 353 meters; dynamic height 971.055

0	5.04	32.08	0	5.04	32.08	25.38
25	−0.53	32.77	25	−0.53	32.77	26.35
50	−1.45	33.15	50	−1.45	33.15	26.68
74	−1.60	33.25	75	−1.60	33.25	26.77
99	−1.61	33.28	100	−1.60	33.28	26.79
149	−1.54	33.34	150	−1.55	33.35	26.86
199	−1.18	33.46	200	−1.15	33.47	26.95
298	1.43	34.18	(300)	1.50	34.20	27.39

Station 3920; 19 June; latitude 48°45′ N., longitude 52°43′ W.; depth 214 meters; dynamic height 971.088

0	6.16	31.99	0	6.16	31.99	25.18
25	2.51	32.29	25	2.51	32.29	25.78
49	−1.14	33.00	50	−1.15	33.01	26.57
71	−1.49	33.18	75	−1.50	33.18	26.71
99	−1.58	33.21	100	−1.60	33.21	26.74
148	−1.62	33.26	150	−1.60	33.26	26.78
197	−1.53	33.35	(200)	−1.50	33.36	26.86

Station 3921; 19 June; latitude 48°43.5′ N., longitude 52°47′ W.; depth 139 meters; dynamic height 971.089

0	6.57	31.81	0	6.57	31.81	24.98
23	1.12	32.45	25	0.80	32.49	26.06
45	−0.83	32.85	50	−1.00	32.90	26.47
68	−1.35	33.04	75	−1.45	33.08	26.63
91	−1.56	33.15	100	−1.60	33.16	26.70
118	−1.61	33.19				

Station 3922; 19 June; latitude 48°43.5′ N., longitude 52°57′ W.; depth 101 meters; dynamic height 971.111

0	6.76	31.86	0	6.76	31.86	25.01
23	4.40	32.10	25	4.00	32.13	25.53
46	0.50	32.55	50	0.00	32.64	26.23
68	−1.05	32.94	75	−1.20	32.99	26.55
91	−1.35	33.07				

Station 3923; 19 June; latitude 48°38.5′ N., longitude 52°44′ W.; depth 174 meters; dynamic height 971.082

0	6.33	31.78	0	6.33	31.78	24.99
25	0.02	32.63	25	0.02	32.63	26.22
49	−1.32	33.03	50	−1.35	33.03	26.59
74	−1.50	33.10	75	−1.50	33.10	26.64
98	−1.56	33.16	100	−1.55	33.16	26.70
148	−1.62	33.24	(150)	−1.60	33.24	26.76

Station 3924; 19–20 June; latitude 48°33.5′ N., longitude 52°35′ W.; depth 252 meters; dynamic height 971.068

0	4.85	32.26	0	4.85	32.26	25.55
30	1.90	32.56	25	2.55	32.50	25.95
59	0.07	33.17	50	0.40	33.00	26.50
88	−0.60	33.24	75	−0.35	33.22	26.70
118	−1.58	33.27	100	−0.95	33.25	26.76
176	−1.28	33.42	150	−1.45	33.33	26.83
234	0.40	33.83	200	−0.65	33.57	27.01

STATIONS OCCUPIED IN 1949—Continued

Station 3925; 20 June; latitude 48°14′ N., longitude 52°01′ W.; depth 173 meters; dynamic height 971.043

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.53	32.45	0	4.53	32.45	25.72
24	0.19	32.79	25	0.20	32.80	26.35
47	−0.82	33.10	50	−0.95	33.12	26.65
71	−1.55	33.24	75	−1.55	33.25	26.77
95	−1.55	33.30	100	−1.55	33.31	26.82
142	−1.38	33.42	(150)	−1.35	33.45	26.93

Station 3926; 20 June; latitude 48°06′ N., longitude 51°50′ W.; depth 158 meters; dynamic height 971.028

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.26	32.78	0	4.26	32.78	26.02
24	0.65	32.96	25	0.60	32.97	26.46
49	−1.35	33.18	50	−1.35	33.19	26.72
73	−1.31	33.32	75	−1.30	33.33	26.83
97	−1.37	33.38	100	−1.35	33.39	26.88
146	−0.31	33.59	150	−0.20	33.61	27.02

Station 3927; 20 June; latitude 48°00′ N., longitude 51°29′ W.; depth 182 meters; dynamic height 971.040

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.17	32.73	0	4.17	32.73	25.99
29	2.85	32.81	25	3.20	32.82	26.15
56	−0.94	33.15	50	−0.30	33.09	26.59
85	−1.59	33.34	75	−1.35	33.29	26.79
113	−1.13	33.41	100	−1.40	33.39	26.88
169	0.12	33.68	150	−0.30	33.59	27.00

Station 3928; 20 June; latitude 47°50′ N., longitude 51°06′ W.; depth 148 meters; dynamic height 971.035

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.20	32.81	0	4.20	32.81	26.06
27	3.14	32.82	25	3.30	32.82	26.14
53	−0.18	33.10	50	0.30	33.07	26.56
79	−1.11	33.38	75	−1.05	33.35	26.84
105	−0.33	33.53	100	−0.50	33.51	26.95
141	0.01	33.64				

Station 3929; 20 June; latitude 47°43.5′ N., longitude 50°49′ W.; depth 140 meters; dynamic height 971.035

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.19	32.87	0	4.19	32.87	26.10
25	3.22	32.87	25	3.22	32.87	26.19
49	0.96	33.04	50	0.95	33.05	26.50
74	−0.44	33.34	75	−0.45	33.35	26.82
98	−0.59	33.51	100	−0.60	33.51	26.95
128	−0.52	33.52				

Station 3930; 20 June; latitude 47°37′ N., longitude 50°33′ W.; depth 119 meters; dynamic height 971.037

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.40	32.88	0	4.40	32.88	26.09
25	3.17	32.89	25	3.17	32.89	26.21
50	1.52	32.99	50	1.52	32.99	26.42
76	−0.39	33.36	75	−0.35	33.35	26.80
101	−0.30	33.52	100	−0.30	33.51	26.94

Station 3931; 20 June; latitude 47°31′ N., longitude 50°17′ W.; depth 113 meters; dynamic height 971.034

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.67	32.92	0	4.67	32.92	26.09
25	3.71	32.92	25	3.71	32.92	26.19
50	0.49	33.14	50	0.49	33.14	26.60
76	−0.05	33.45	75	−0.05	33.45	26.88
101	−0.11	33.47	100	−0.10	33.47	26.90

Station 3932; 20 June; latitude 47°23.5′ N., longitude 50°00′ W.; depth 97 meters; dynamic height 971.037

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.11	32.98	0	5.11	32.98	26.09
25	4.10	32.99	25	4.10	32.99	26.20
50	2.13	33.14	50	2.13	33.14	26.50
75	0.21	33.41	75	0.21	33.41	26.84
90	−0.10	33.51				

Station 3933; 5 July; latitude 53°42.5′ N., longitude 55°48′ W.; depth 104 meters; dynamic height 1454.923

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.67	24.845	0	6.67	24.845	19.51
24	0.01	32.52	25	−0.10	32.53	26.14
49	−1.55	32.95	50	−1.55	32.95	26.53
73	−1.70	32.98	75	−1.70	32.98	26.55
97	−1.66	33.03	100	−1.65	33.03	26.59

Station 3934; 5 July; latitude 53°52′ N., longitude 55°30′ W.; depth 200 meters; dynamic height 1454.822

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.38	32.14	0	3.38	32.14	25.60
24	0.38	32.61	25	0.25	32.66	26.23
49	−1.44	33.04	50	−1.45	33.05	26.61
73	−1.53	33.12	75	−1.50	33.12	26.66
97	−1.41	33.25	100	−1.40	33.26	26.77
146	−1.05	33.54	150	−1.05	33.56	27.01
194	−0.80	33.72	200	−0.80	33.73	27.13

Station 3935; 5 July; latitude 53°55′ N., longitude 55°26′ W.; depth 169 meters; dynamic height 1454.785

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.85	32.48	0	3.85	32.48	25.82
25	3.18	32.90	25	3.18	32.90	26.21
50	0.55	33.09	50	0.55	33.09	26.55
75	−1.20	33.46	75	−1.20	33.46	26.94
100	−1.02	33.62	100	−1.02	33.62	27.06
150	0.09	33.97	150	0.09	33.97	27.29

Station 3936; 5 July; latitude 54°05′ N., longitude 55°08′ W.; depth 161 meters; dynamic height 1454.789

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.24	32.50	0	4.24	32.50	25.79
25	0.65	32.76	25	0.65	32.76	26.29
50	−1.05	33.13	50	−1.05	33.13	26.66
75	−1.26	33.33	75	−1.26	33.33	26.83
99	−1.27	33.46	100	−1.25	33.47	26.95
149	−0.35	33.85	150	−0.35	33.86	27.22

Station 3937; 5 July; latitude 54°08′ N., longitude 55°02′ W.; depth 163 meters; dynamic height 1454.781

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.96	32.40	0	3.96	32.40	25.75
25	−0.35	32.92	25	−0.35	32.92	26.45
50	−1.45	33.18	50	−1.45	33.18	26.71
75	−1.34	------	75	−1.34	33.35	26.85
100	−1.31	33.50	100	−1.31	33.50	26.97
150	−0.13	33.93	150	−0.13	33.93	27.27

Station 3938; 5 July; latitude 54°28.5′ N., longitude 54°25′ W.; depth 219 meters; dynamic height 1454.789

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.77	32.22	0	3.77	32.22	25.62
25	−1.37	32.96	25	−1.37	32.96	26.53
50	−1.55	33.10	50	−1.55	33.10	26.65
75	−1.34	33.28	75	−1.34	33.28	26.79
100	−1.15	33.48	100	−1.15	33.48	26.95
150	−0.55	33.80	150	−0.55	33.80	27.18
200	0.12	34.01	200	0.12	34.01	27.32

Station 3939; 5 July; latitude 54°47′ N., longitude 53°49′ W.; depth 331 meters; dynamic height 1454.789

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.29	32.06	0	3.29	32.06	25.54
26	−1.13	32.94	25	−1.00	32.93	26.49
52	−1.46	33.12	50	−1.45	33.11	26.65
77	−1.20	33.32	75	−1.20	33.30	26.80
103	−1.15	33.48	100	−1.15	33.46	26.94
154	−0.47	33.83	150	−0.55	33.80	27.18
206	0.62	34.15	200	0.50	34.12	27.31
309	3.29	34.73	300	3.10	34.68	27.64

Station 3940; 6 July; latitude 54°53′ N., longitude 53°36′ W.; depth 645 meters; dynamic height 1454.693

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.67	32.49	0	3.67	32.49	25.84
25	−1.02	33.36	25	−1.02	33.36	26.84
50	−0.55	33.74	50	−0.55	33.74	27.13
75	−0.15	33.96	75	−0.15	33.96	27.30
100	0.33	34.07	100	0.33	34.07	27.36
150	1.84	34.39	150	1.84	34.39	27.47
200	3.16	34.68	200	3.16	34.68	27.63
300	3.49	34.80	300	3.49	34.80	27.70
397	3.33	34.83	400	3.30	34.83	27.74
586	3.31	34.84	600	3.35	34.84	27.74

Station 3941; 6 July; latitude 54°57′ N., longitude 53°24′ W.; depth 1652 meters; dynamic height 1454.600

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.08	33.59	0	5.08	33.59	26.57
25	4.95	34.52	25	4.95	34.52	27.32
49	4.50	34.68	50	4.45	34.68	27.50
74	3.26	34.68	75	3.25	34.68	27.62
98	3.40	34.76	100	3.40	34.77	27.69
149	3.40	34.80	150	3.40	34.80	27.71
198	3.32	34.81	200	3.30	34.81	27.73
296	3.22	34.83	300	3.20	34.83	27.75
414	3.27	34.85	400	3.25	34.85	27.76
620	3.28	34.87	600	3.30	34.87	27.775
825	3.35	34.875	800	3.30	34.87	27.775
1,030	3.36	34.875	1,000	3.35	34.88	27.775
1,532	3.45	------	1,500	3.45	34.90	27.78

Station 3942; 6 July; latitude 55°00′ N., longitude 53°17′ W.; depth 2085 meters; dynamic height 1454.586

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.13	34.36	0	5.13	34.36	27.18
23	4.13	34.56	25	4.05	34.57	27.46
46	3.07	34.66	50	3.15	34.69	27.64
69	3.70	34.82	75	3.70	34.82	27.70
91	3.65	34.82	100	3.60	34.82	27.71
137	3.51	34.83	150	3.50	34.83	27.72
183	3.46	34.83	200	3.45	34.83	27.72
274	3.38	34.84	300	3.35	34.84	27.74
358	3.36	34.84	400	3.35	34.84	27.74
543	3.28	34.86	600	3.30	34.86	27.77
731	3.34	34.87	800	3.35	34.87	27.77
923	3.35	34.88	1,000	3.40	34.88	27.77
1,413	3.44	34.91	1,500	3.35	34.91	26.80
1,925	3.13	34.94	2,000	3.10	34.94	27.85

Station 3943; 6 July; latitude 55°12′ N., longitude 52°56′ W.; depth 2898 meters; dynamic height 1454.570

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.59	34.68	0	5.59	34.68	27.37
27	5.00	34.70	25	5.05	34.70	27.45
52	4.08	34.75	50	4.15	34.75	27.59
79	3.79	34.77	75	3.80	34.77	27.65
104	3.48	34.79	100	3.50	34.79	27.69
157	3.28	34.84	150	3.30	34.83	27.74
210	3.29	34.84	200	3.25	34.84	27.75
314	3.29	34.86	300	3.30	34.86	27.77
455	3.31	34.86	400	3.30	34.86	27.77
632	3.33	34.87	600	3.30	34.87	27.775
838	3.38	34.88	800	3.35	34.88	27.775
1,044	3.39	34.89	1,000	3.40	34.89	27.78
1,572	3.38	34.93	1,500	3.35	34.93	27.81
2,107	2.88	34.94	2,000	2.95	34.94	27.86
2,464	2.50	34.91	2,500	2.45	34.91	27.88
2,773	2.15	34.92	------	------	------	------

Station 3944; 6 July; latitude 55°29.5′ N., longitude 52°25′ W.; depth 3219 meters; dynamic height 1454.571

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.54	34.70	0	6.54	34.70	27.26
26	5.18	34.72	25	5.20	34.72	27.45
52	4.21	34.74	50	4.30	34.74	27.57
78	3.37	34.82	75	3.45	34.82	27.72
103	3.32	34.82	100	3.30	34.82	27.74
156	3.24	34.84	150	3.25	34.84	27.75
207	3.28	34.85	200	3.25	34.85	27.76
310	3.24	34.86	300	3.25	34.86	27.77
417	3.27	34.86	400	3.25	34.86	27.77
622	3.25	34.87	600	3.25	34.87	27.78
829	3.29	34.87	800	3.30	34.875	27.78
1,032	3.32	34.88	1,000	3.35	34.885	27.78
1,556	3.44	34.89	1,500	3.40	34.89	27.78
2,086	3.26	34.93	2,000	3.30	34.93	27.82
------	3.32	34.88	------	------	------	------
------	2.94	34.91	------	------	------	------
------	3.25	34.85	------	------	------	------

Table of Oceanographic Data—Continued

STATIONS OCCUPIED IN 1949—Continued

Station 3945; 6–7 July; latitude 55°54′ N., longitude 51°43′ W.; depth 3429 meters; dynamic height 1454.575

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	7.00	34.64	0	7.00	34.64	27.15
25	5.67	34.68	25	5.67	34.68	27.36
51	4.04	34.75	50	4.10	34.75	27.60
76	3.60	34.78	75	3.60	34.78	27.67
102	3.33	34.82	100	3.35	34.82	27.73
152	3.34	34.85	150	3.35	34.85	27.75
203	3.36	34.85	200	3.35	34.85	27.75
305	3.33	34.88	300	3.35	34.88	27.77
402	3.31	34.87	400	3.30	34.87	27.78
603	3.28	34.87	600	3.30	34.87	27.78
802	3.25	34.88	800	3.25	34.88	27.78
1,000	3.32	34.88	1,000	3.32	34.88	27.78
1,510	3.35	34.89	1,500	3.35	34.89	27.78
2,026	3.44	34.94	2,000	3.45	34.94	27.81
2,486	3.13	34.94	2,500	3.10	34.94	27.85
2,986	2.67	34.93	3,000	2.65	34.93	27.88
3,296	2.08	34.91				

Station 3946; 7 July; latitude 56°27′ N., lontigude 50°34′ W.; depth 3667 meters; dynamic height 1454.584

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	7.33	34.66	0	7.33	34.66	27.13
24	6.11	34.70	25	6.05	34.70	27.33
49	4.26	34.76	50	4.20	34.76	27.60
73	3.93	34.80	75	3.90	34.80	27.66
98	3.53	34.82	100	3.55	34.82	27.71
145	3.52	34.86	150	3.50	34.86	27.75
194	3.48	34.86	200	3.45	34.86	27.75
292	3.33	34.85	300	3.35	34.85	27.75
378	3.34	34.86	400	3.30	34.86	27.77
568	3.31	34.88	600	3.30	34.88	27.78
757	3.34	34.885	800	3.35	34.88	27.78
947	3.32	34.87	1,000	3.35	34.87	27.77
1,443	3.35	34.88	1,500	3.35	34.88	27.78
1,953	3.50	34.93	2,000	3.50	34.93	27.80

Station 3947; 7 July; latitude 56°58.5′ N., longitude 49°31′ W.; depth 3662 meters; dynamic height 1454.605

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.12	33.98	0	6.12	33.98	26.76
26	2.19	34.24	25	2.20	34.24	27.37
52	3.45	34.57	50	3.35	34.53	27.49
77	2.98	34.64	75	3.00	34.64	27.62
103	3.23	34.72	100	3.20	34.71	27.66
154	3.39	34.80	150	3.40	34.80	27.71
206	3.66	34.85	200	3.65	34.85	27.72
309	3.67	34.88	300	3.65	34.88	27.74
413	3.61	34.89	400	3.60	34.89	27.76
616	3.36	34.86	500	3.40	34.86	27.76
820	3.37	34.87	600	3.35	34.87	27.77
1,021	3.32	34.87	800	3.35	34.87	27.77
1,543	3.37	34.88	1,000	3.35	34.88	27.78
2,080	3.42	34.935	1,500	3.40	34.93	27.81
2,504	3.10	34.93	2,000	3.10	34.93	27.84
3,006	2.79	34.92	2,500	2.80	34.92	27.86
3,507	1.85	34.90	3,000	1.85	34.90	27.92
			3,500			

Station 3948; 8 July; latitude 57°30′ N., longitude 48°26′ W.; depth 3420 meters; dynamic height 1454.594

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.87	34.10	0	5.87	34.10	26.88
26	2.97	34.31	25	3.00	34.31	27.36
52	2.86	34.57	50	2.85	34.55	27.56
78	3.16	34.70	75	3.10	34.69	27.65
104	3.39	34.78	100	3.35	34.77	27.69
155	3.63	34.86	150	3.60	34.85	27.73
206	3.64	34.875	200	3.60	34.87	27.75
310	3.44	34.865	300	3.45	34.87	27.76
398	3.57	34.89	400	3.55	34.89	27.76
598	3.34	34.88	600	3.35	34.88	27.77
801	3.35	34.89	800	3.35	34.88	27.77
1,006	3.33	34.88	1,000	3.35	34.88	27.77
1,521	3.37	34.88	1,500	3.35	34.89	27.78
1,554	3.36	34.89	2,000	3.30	34.93	27.82
2,084	3.30	34.94	2,500	3,00	34.94	27.86
2,621	2.88	34.94	3,000	2.35	34.93	27.90
3,161	2.10	34.92				
3,406	1.66	34.90				

Station 3949; 8 July; latitude 58°03′ N., longitude 47°18′ W.; depth 3182 meters; dynamic height 1454.588

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.31	34.38	0	5.31	34.38	27.17
25	4.85	34.44	25	4.85	34.44	27.27
50	4.18	34.71	50	4.18	34.71	27.56
75	3.24	34.68	75	3.24	34.68	27.62
101	3.29	34.72	100	3.30	34.72	27.66
151	3.59	34.84	150	3.60	34.83	27.71
201	3.71	34.87	200	3.70	34.87	27.74
302	3.91	34.92	300	3.90	34.92	27.76
421	3.75	34.905	400	3.75	34.91	27.76
631	3.52	34.90	600	3.55	34.90	27.77
842	3.41	34.89	800	3.40	34.89	27.78
1,054	3.38	34.89	1,000	3.40	34.89	27.78
1,899	3.29	34.925	1,500	3.35	34.91	27.80
2,491	2.71	34.925	2,000	3.25	34.92	27.82
3,051	1.72	34.895	2,500	2.70	34.92	27.87
			3,000	1.85	34.90	27.92

Station 3950; 8 July; latitude 58°31′ N., longitude 46°21′ W.; depth 2151 meters; dynamic height 1454.591

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	6.02	34.58	0	6.02	34.58	27.24
25	5.27	34.59	25	5.27	34.59	27.34
49	4.31	34.67	50	4.30	34.67	27.52
74	3.89	34.74	75	3.90	34.74	27.61
98	3.64	34.74	100	3.65	34.74	27.63
147	3.50	34.81	150	3.50	34.81	27.71
196	3.67	34.86	200	3.70	34.87	27.74
294	3.74	34.90	300	3.70	34.90	27.76
359	3.53	34.87	400	3.50	34.87	27.76
539	3.47	34.88	600	3.45	34.88	27.76
717	3.43	34.89	800	3.40	34.88	27.77
904	3.39	34.88	1,000	3.40	34.88	27.77
1,383	3.41	34.93	1,500	3.35	34.93	27.81
1,858	3.06	34.91	2,000	2.85	34.93	27.86
2,193	2.43	34.90				

Station 3951; 9 July; latitude 58°52′ N., longitude 45°34′ W.; depth 2488 meters; dynamic height 1454.554

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.24	34.71	0	5.24	34.71	27.44
24	5.04	34.70	25	5.00	34.70	27.46
48	4.33	34.78	50	4.25	34.78	27.60
72	3.63	34.80	75	3.60	34.80	27.69
96	3.63	34.84	100	3.65	34.84	27.71
143	3.76	34.87	150	3.75	34.88	27.73
190	3.87	34.92	200	3.85	34.92	27.76
286	3.82	34.93	300	3.80	34.93	27.77
316	3.75	34.92	400	3.65	34.92	27.78
478	3.59	34.91	600	3.50	34.90	27.78
642	3.46	34.89	800	3.45	34.90	27.78
816	3.46	34.90	1,000	3.45	34.92	27.80
1,272	3.47	34.94	1,500	3.25	34.94	27.83
1,734	3.08	34.94	2,000	2.85	34.94	27.87
2,117	2.77	34.94				

Station 3952; 9 July; latitude 59°07′ N., longitude 45°03′ W.; depth 2067 meters; dynamic height 1454.572

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	5.72	34.79	0	5.72	34.79	27.44
24	5.71	34.80	25	5.70	34.80	27.45
47	5.58	34.81	50	5.50	34.82	27.50
71	4.94	34.86	75	4.85	34.87	27.61
94	4.45	34.89	100	4.45	34.90	27.68
142	4.41	34.95	150	4.40	34.95	27.72
189	4.32	34.96	200	4.30	34.96	27.74
283	4.09	34.95	300	4.05	34.95	27.76
317	4.05	34.94	400	3.90	34.93	27.76
484	3.78	34.92	600	3.70	34.91	27.77
659	3.64	34.905	800	3.55	34.91	28.78
840	3.55	34.91	1,000	3.50	34.92	27.80
1,315	3.43	34.94	1,500	3.30	34.93	27.82
1,826	2.75	34.92	(2,000)	2.10	34.91	28.89

Station 3953; 9 July; latitude 59°20.5′ N., longitude 44°32′ W.; depth 1044 meters; dynamic height 1454.620

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.33	34.67	0	4.33	34.67	27.51
27	4.24	34.66	25	4.25	34.66	27.51
53	3.63	34.62	50	3.65	34.62	27.54
80	3.54	34.60	75	3.55	34.60	27.54
106	3.48	34.60	100	3.50	34.60	27.58
161	3.83	34.74	150	3.75	34.70	27.59
214	4.51	34.90	200	4.40	34.86	27.65
320	4.55	34.95	300	4.55	34.95	27.71
350	4.48	34.96	400	4.40	34.97	27.73
530	4.37	34.97	600	4.30	34.96	27.74
713	4.16	34.95	800	4.00	34.94	27.76
900	3.80	34.92	(1,000)	3.65	34.93	27.78

Station 3954; 9 July; latitude 59°31′ N., longitude 44°06′ W.; depth 200 meters; dynamic height 1454.712

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	−0.68	32.51	0	−0.68	32.51	26.15
24	−0.37	32.82	25	−0.35	32.85	26.41
48	−0.61	33.68	50	−0.60	33.70	27.10
72	0.36	33.92	75	0.40	33.94	27.25
97	1.22	34.10	100	1.35	34.12	27.34
145	2.54	34.45	150	2.55	34.46	27.52
169	2.63	34.46				

Station 3955; 11 July; latitude 62°14′ N., longitude 56°06′ W.; depth 2616 meters; dynamic height 1454.685

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.80	33.74	0	3.80	33.74	26.83
25	3.77	33.74	25	3.77	33.74	26.83
49	0.22	33.92	50	0.20	33.93	27.25
74	0.59	34.08	75	0.60	34.09	27.35
99	0.91	34.22	100	0.95	34.23	27.44
149	2.40	34.50	150	2.45	34.51	27.56
198	3.85	34.76	200	3.85	34.67	27.56
297	4.19	34.87	300	4.15	34.86	27.68
287	4.13	34.85	400	3.90	34.86	27.71
439	3.83	34.86	600	3.75	34.88	27.73
595	3.77	34.88	800	3.75	34.90	27.75
755	3.75	34.90	1,000	3.65	34.90	27.76
1,174	3.61	34.90	1,500	3.55	31.93	27.79
1,610	3.53	34.94	2,000	3.25	34.94	27.83
2,257	2.85	34.91	(2,500)	2.45	34.94	27.90

Station 3956; 11 July; latitude 62°17′ N., longitude 57°01′ W.; depth 2474 meters; dynamic height 1454.643

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.24	33.72	0	4.24	33.72	26.76
25	2.41	33.88	25	2.41	33.88	27.06
51	1.92	34.24	50	1.90	34.23	27.38
76	2.09	34.38	75	2.10	34.38	27.48
102	2.44	34.51	100	2.40	34.50	27.56
153	3.54	34.73	150	3.50	34.72	27.64
204	3.89	34.82	200	3.85	34.81	27.67
306	3.92	34.86	300	3.95	34.86	27.70
288	3.96	31.85	400	3.90	34.87	27.72
452	3.87	34.88	600	3.70	34.87	27.74
630	3.66	34.87	800	3.70	34.90	27.76
821	3.68	34.90	1,000	3.65	34.91	27.77
1,266	3.58	34.93	1,500	3.10	34.93	27.81
1,733	3.27	34.93	2,000	2.90	34.93	27.86
2,231	2.56	34.925				

Station 3957; 11 July; latitude 62°21.5′ N., longitude 58°31′ W.; depth 2076 meters; dynamic height 1454.654

Observed values: Depth, meters	Temperature, °C.	Salinity, ‰	Scaled values: Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	4.64	33.86	0	4.64	33.86	26.83
26	4.10	33.86	25	4.10	33.86	26.89
52	2.36	34.08	50	2.55	34.06	27.20
78	1.51	34.32	75	1.55	34.30	27.46
104	2.36	34.54	100	2.15	34.51	27.59
154	3.90	34.80	150	3.80	34.79	27.66
206	3.62	34.80	200	3.60	34.80	27.69
310	3.77	34.84	300	3.75	34.84	27.70
414	3.72	34.83	400	3.70	34.83	27.70
619	3.61	34.86	600	3.60	34.86	27.74
824	3.48	34.86	800	3.50	34.86	27.75
1,028	3.59	34.89	1,000	3.60	34.89	27.76
1,515	3.47	34.94	1,500	3.50	34.94	27.81
2,062	2.74	34.93	2,000	2.85	34.93	27.86

Station 3958; 11 July; latitude 62°24.5′ N., longitude 59°22′ W.; depth 1485 meters; dynamic height 1454.689

Observed values: Depth, meters	Temperature, °C.	Salinity, °/oo	Scaled values: Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	4.03	33.79	0	4.03	33.79	26.83
25	3.67	33.80	25	3.67	33.80	26.88
49	−0.05	34.11	50	−0.05	34.12	27.42
74	0.81	34.24	75	0.85	34.24	27.46
98	1.66	34.36	100	1.75	34.38	27.51
147	3.76	34.69	150	3.80	34.70	27.59
196	4.16	34.78	200	4.20	34.79	27.62
294	4.51	34.89	300	4.40	34.87	27.66
360	4.35	34.88	400	4.35	34.88	27.67
542	4.04	34.87	600	3.90	34.86	27.71
725	3.66	34.86	800	3.65	34.86	27.73
909	3.65	34.87	1,000	3.60	34.88	27.75
1,371	3.57	34.93	(1,500)	3.55	34.93	27.79

Station 3959; 12 July; latitude 62°27′ N., longitude 60°07′ W.; depth 1306 meters; dynamic height 1454.689

Observed values: Depth, meters	Temperature, °C.	Salinity, °/oo	Scaled values: Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	4.12	33.77	0	4.12	33.77	26.82
25	3.52	33.78	25	3.52	33.78	26.88
49	0.60	33.98	50	0.60	33.99	27.27
74	0.73	34.22	75	0.80	34.23	27.45
99	1.32	34.34	100	1.40	34.35	27.52
148	2.96	34.61	150	3.00	34.62	27.61
197	4.08	34.80	200	4.10	34.81	27.65
296	4.32	34.88	300	4.35	34.88	27.67
385	4.29	34.90	400	4.25	34.90	27.70
576	3.86	34.88	600	3.85	34.88	27.72
768	3.84	34.91	800	3.85	34.91	27.75
960	3.72	34.92	1,000	3.70	34.92	27.78
1,248	3.47	34.96				

Station 3960; 12 July; latitude 62°27.5′ N., longitude 61°15′ W.; depth 624 meters; dynamic height 1454.703

Observed values: Depth, meters	Temperature, °C.	Salinity, °/oo	Scaled values: Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	3.72	33.62	0	3.72	33.62	26.75
26	3.53	33.75	25	3.55	33.75	26.86
52	−1.08	33.83	50	−1.00	33.82	27.22
78	−0.50	34.03	75	−0.55	34.02	27.36
104	−0.44	34.14	100	−0.45	34.12	27.44
154	1.42	34.34	150	1.25	34.32	27.51
206	3.67	34.66	200	3.50	34.63	27.56
310	3.68	34.74	300	3.70	34.73	27.62
386	4.10	34.82	400	4.05	34.82	27.66
582	3.78	34.82	600	3.70	34.82	27.70

Station 3961; 12 July; latitude 62°28′ N., longitude 61°46′ W.; depth 391 meters; dynamic height 1454.743

Observed values: Depth, meters	Temperature, °C.	Salinity, °/oo	Scaled values: Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	2.59	32.87	0	2.59	32.87	26.24
24	0.48	33.19	25	0.45	33.20	26.66
47	−1.52	33.58	50	−1.55	33.59	27.05
71	−1.50	33.69	75	−1.45	33.70	27.14
94	−1.05	33.82	100	−0.90	33.85	27.24
141	0.08	34.07	150	0.25	34.11	27.40
189	1.11	34.27	200	1.40	34.32	27.50
283	3.30	34.64	300	3.30	34.65	27.60
366	3.24	34.67				

Station 3962; 12 July; latitude 62°28′ N., longitude 62°14′ W.; depth 306 meters; dynamic height 1454.800

Observed values: Depth, meters	Temperature, °C.	Salinity, °/oo	Scaled values: Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	2.02	32.63	0	2.02	32.63	26.10
24	1.53	32.75	25	1.50	32.76	26.23
47	−0.27	33.15	50	−0.55	33.20	26.70
71	−1.62	33.47	75	−1.65	33.49	26.97
94	−1.62	33.58	100	−1.60	33.59	27.05
141	−1.41	33.72	150	−1.30	33.74	27.16
188	−0.58	33.92	200	−0.30	33.98	27.31
282	1.99	34.42	(300)	2.40	34.50	27.56

Station 3963; 12 July; latitude 62°26′ N., longitude 62°51′ W.; depth 269 meters; dynamic height 1454.801

Observed values: Depth, meters	Temperature, °C.	Salinity, °/oo	Scaled values: Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	1.40	32.34	0	1.40	32.34	25.91
25	−1.19	32.98	25	−1.19	32.98	26.54
49	−1.69	33.19	50	−1.70	33.20	26.74
74	−1.58	33.34	75	−1.60	33.35	26.86
98	−1.59	33.48	100	−1.55	33.50	26.98
147	−0.90	33.75	150	−0.85	33.77	27.17
197	−0.45	33.93	200	−0.45	33.93	27.28
251	−0.38	33.96				

Station 3964; 12 July; latitude 62°23.5′ N., longitude 63°18′ W.; depth 258 meters; dynamic height 1454.816

Observed values: Depth, meters	Temperature, °C.	Salinity, °/oo	Scaled values: Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	0.71	32.12	0	0.71	32.12	25.78
22	−1.36	32.73	25	−1.40	32.77	26.38
43	−1.65	33.13	50	−1.65	33.17	26.71
65	−1.61	33.24	75	−1.60	33.30	26.81
87	−1.56	33.39	100	−1.55	33.47	26.96
130	−1.59	33.60	150	−1.60	33.65	27.10
174	−1.57	33.70	200	−1.05	33.82	27.22
217	−0.60	33.91				

Station 3965; 12 July; latitude 62°20′ N., longitude 63°55′ W.; depth 192 meters; dynamic height 1454.825

Observed values: Depth, meters	Temperature, °C.	Salinity, °/oo	Scaled values: Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	−1.38	31.39	0	−1.38	31.39	25.26
25	−1.65	32.95	25	−1.65	32.95	26.53
49	−1.70	33.11	50	−1.70	33.11	26.66
74	−1.59	33.18	75	−1.60	33.18	26.71
99	−1.54	33.22	100	−1.55	33.22	26.75
148	−0.98	33.72	150	−0.95	33.73	27.14
183	−0.58	33.83				

Station 3966; 13 July; latitude 62°30′ N., longitude 56°14′ W.; depth 2268 meters; dynamic height 1454.665

Observed values: Depth, meters	Temperature, °C.	Salinity, °/oo	Scaled values: Depth, meters	Temperature, °C.	Salinity, °/oo	σ_t
0	3.64	33.60	0	3.64	33.60	26.73
26	3.58	33.62	25	3.60	33.62	26.76
51	0.86	33.95	50	1.95	33.94	27.14
77	1.15	34.19	75	1.15	34.18	27.39
101	1.74	34.36	100	1.70	34.35	27.49
153	2.68	34.57	150	2.60	34.56	27.59
201	3.59	34.76	200	3.50	34.74	27.65
305	3.92	34.85	300	3.90	34.85	27.70
369	3.81	34.86	400	3.75	34.86	27.72
561	3.61	34.86	600	3.65	34.89	27.75
716	3.72	34.90	800	3.70	34.90	27.76
913	3.70	34.91	1,000	3.70	34.91	27.77
1,432	3.58	34.91	1,500	3.50	34.92	27.80
1,983	3.05	34.92	2,000	3.05	34.92	27.84
2,234	2.79	34.93				

Station 3967; 14 July; latitude 62°53.5′ N., longitude 55°22′ W.; depth 2305 meters; dynamic height 1454.660

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.49	33.56	0	3.49	33.56	26.71
27	3.67	33.63	25	3.65	33.63	26.75
52	1.69	34.09	50	1.80	34.05	27.25
79	1.42	34.28	75	1.40	34.27	27.46
105	2.07	34.44	100	1.95	34.42	27.54
158	3.05	34.65	150	2.95	34.62	27.61
210	3.73	34.80	200	3.60	34.78	27.67
315	3.73	34.83	300	3.75	34.83	27.69
388	3.63	34.84	400	3.60	34.81	27.72
599	3.72	34.88	600	3.70	34.88	27.74
756	3.61	34.88	800	3.60	34.88	27.75
970	3.59	34.90	1,000	3.60	34.90	27.77
1,453	3.50	34.93	1,500	3.45	34.93	27.80
2,080	2.93	34.925	2,000	3.00	34.93	27.85
2,330	2.07	34.915				

Station 3968; 14 July; latitude 63°10′ N., longitude 54°35′ W.; depth 1353 meters; dynamic height 1454.760

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.56	33.24	0	1.56	33.24	26.62
26	1.53	33.25	25	1.55	33.25	26.63
52	1.97	33.50	50	1.95	33.48	26.78
78	0.45	33.73	75	0.50	33.71	27.06
104	0.08	33.85	100	0.10	33.83	27.17
155	0.64	34.08	150	0.60	34.06	27.33
207	0.98	34.23	200	0.90	34.21	27.44
311	3.70	34.70	300	3.50	34.66	27.59
383	3.61	34.74	400	3.65	34.76	27.65
567	4.27	34.90	600	4.25	34.90	27.68
746	4.06	34.91	(800)	3.95	34.91	27.74
			(1,000)	3.65	34.91	27.77

Station 3969; 14 July; latitude 63°22′ N., longitude 53°56′ W.; depth 1057 meters; dynamic height 1454.736

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.11	33.35	0	2.11	33.35	26.67
24	1.23	33.49	25	1.20	33.49	26.84
49	0.09	33.66	50	0.05	33.66	27.05
73	0.09	33.76	75	0.05	33.77	27.14
98	0.17	33.92	100	0.20	33.93	27.25
147	0.63	34.08	150	0.65	34.08	27.34
195	1.00	34.20	200	1.15	34.22	27.43
293	3.41	34.66	300	3.85	34.73	27.60
248	3.30	34.63	400	4.50	34.88	27.65
395	4.48	34.88	600	4.10	34.91	27.73
558	4.19	34.91	(800)	3.90	34.90	27.74
737	3.97	34.90	(1,000)	3.70	34.90	27.76

Station 3970; 14 July; latitude 63°32.5′ N., longitude 53°30′ W.; depth 1565 meters; dynamic height 1454.763

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.19	33.30	0	2.19	33.30	26.61
26	2.15	33.30	25	2.15	33.30	26.62
51	1.40	33.49	50	1.45	33.49	26.82
76	0.04	33.67	75	0.00	33.67	27.06
101	0.29	33.78	100	0.30	33.78	27.12
153	1.27	34.08	150	1.20	34.06	27.30
203	2.12	34.35	200	2.10	34.34	27.45
304	3.27	34.67	300	3.25	34.66	27.61
372	3.79	34.77	400	3.85	34.79	27.65
560	4.02	34.86	600	4.00	34.87	27.71
749	3.95	34.905	800	3.90	34.90	27.74
942	3.79	34.90	1,000	3.75	34.90	27.75
1,438	3.51	34.92	(1,500)	3.45	34.92	27.80

Station 3971; 14-15 July; latitude 63°38.5′ N., longitude 53°16′ W.; depth 1060 meters; dynamic height 1454.792

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.22	33.31	0	1.22	33.31	26.70
22	1.20	33.32	25	1.20	33.32	26.71
43	0.90	33.33	50	0.60	33.38	26.78
65	−0.19	33.50	75	−0.20	33.58	26.99
87	−0.09	33.67	100	0.05	33.72	27.10
129	0.33	33.83	150	0.45	33.90	27.21
172	0.59	33.97	200	1.10	34.09	27.33
259	1.95	34.34	300	2.35	34.44	27.51
338	2.74	34.52	400	3.35	34.65	27.59
513	4.46	34.88	600	4.35	34.89	27.68
694	4.16	34.90	800	3.95	34.91	27.74
899	3.80	34.92	(1,000)	3.60	34.93	27.79

Station 3972; 15 July; latitude 63°43′ N., longitude 53°08′ W.; depth 236 meters; dynamic height 1454.824

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.66	33.35	0	1.66	33.35	26.70
23	1.65	33.35	25	1.65	33.35	26.70
46	1.20	33.40	50	1.05	33.44	26.81
69	0.34	33.61	75	0.30	33.64	27.01
92	0.31	33.68	100	0.30	33.69	27.05
137	0.35	33.73	150	0.35	33.74	27.09
183	0.33	33.77	(200)	0.35	33.78	27.12

Station 3973; 15 July; latitude 63°54′ N., longitude 52°49′ W.; depth 64 meters; dynamic height 1454.831

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.48	33.46	0	1.48	33.46	26.80
25	1.45	33.47	25	1.45	33.47	26.81
49	1.37	33.50	(50)	1.35	33.51	26.85

Station 3974; 15 July; latitude 63°59′ N., longitude 52°42′ W.; depth 41 meters; dynamic height 1454.834

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.91	33.44	0	1.91	33.44	26.76
14	1.80	33.44	25	1.80	33.44	26.76
28	1.80	33.44				

Station 3975; 15 July; latitude 63° 00′ N., longitude 56°32′ W.; depth 2077 meters; dynamic height 1454.735

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.68	33.32	0	2.68	33.32	26.60
26	2.76	33.34	25	2.75	33.34	26.60
50	−0.09	33.66	50	−0.09	33.66	27.05
75	−0.02	33.78	75	−0.02	33.78	27.11
100	0.14	33.91	100	0.14	33.91	27.24
151	1.08	34.24	150	1.05	34.23	27.44
202	2.28	34.48	200	2.20	34.48	27.57
302	4.69	34.86	300	4.70	34.85	27.61
408	4.54	34.90	400	4.55	34.90	27.67
612	4.12	34.90	600	4.15	34.90	27.71
820	3.95	34.90	800	3.95	34.90	27.73
1,030	3.79	34.92	1,000	3.80	34.92	27.77
1,566	3.53	34.93	1,500	3.55	34.93	27.79
1,770	3.31	34.93	2,000	3.05	34.93	27.84
2,020	3.00	34.93				

STATIONS OCCUPIED IN 1949—Continued

Station 3976; 16 July; latitude 63°30′ N., longitude 56°48′ W.; depth 1577 meters; dynamic height 1454.725

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.08	33.31	0	3.08	33.31	26.55
27	2.87	33.49	25	2.85	33.48	26.70
52	1.40	33.72	50	1.60	33.70	26.98
79	0.27	33.87	75	0.40	33.85	27.18
104	0.44	32.98	100	0.40	33.96	27.27
158	0.87	34.22	150	0.80	34.18	27.41
210	2.27	34.47	200	2.00	34.42	27.53
314	4.21	34.84	300	3.65	34.75	27.64
384	4.04	34.82	400	4.25	34.85	27.66
574	4.22	34.88	600	4.20	34.88	27.69
757	3.99	34.92	800	3.95	34.93	27.75
955	3.83	34.935	1,000	3.80	34.94	27.78
1,165	3.38	34.93	(1,500)	3.35	34.93	27.81

Station 3977; 16 July; latitude 64° 00.5′ N., longitude 57°05′ W.; depth 812 meters; dynamic height 1454.756

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.71	33.47	0	2.71	33.47	26.72
27	2.45	33.52	25	2.45	33.52	26.78
52	0.73	33.65	50	0.85	33.64	26.98
79	0.24	33.74	75	0.25	33.73	27.09
104	0.11	33.80	100	0.10	33.79	27.14
157	0.40	33.96	150	0.35	33.93	27.21
210	0.42	34.11	200	0.40	34.08	27.26
314	2.65	34.50	300	2.20	34.44	27.54
368	4.13	34.77	400	4.40	34.83	27.62
558	4.73	34.92	600	4.65	34.92	27.68
751	3.97	34.92	(800)	3.75	34.92	27.77

Station 3978; 16 July; latitude 64°33.5′ N., longitude 57°24′ W.; depth 759 meters; dynamic height 1454.695

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.34	33.62	0	3.34	33.62	26.78
25	3.11	33.82	25	3.11	33.82	26.96
50	−0.99	34.00	50	−0.99	34.00	27.36
75	−0.94	34.04	75	−0.94	34.04	27.39
100	−0.19	34.16	100	−0.19	34.16	27.46
150	3.15	34.54	150	3.15	34.54	27.52
199	3.89	34.68	200	3.90	34.68	27.56
299	4.82	34.85	300	4.80	34.85	27.60
387	4.83	34.88	400	4.80	34.88	27.62
584	4.52	34.90	600	4.50	34.90	27.67
732	3.98	34.89				

Station 3979; 16 July; latitude 65°00.5′ N., longitude 57°39′ W.; depth 659 meters; dynamic height 1454.731

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.54	32.21	0	1.54	32.21	25.79
22	−0.52	33.25	25	−0.50	33.29	26.76
44	0.03	33.68	50	−0.35	33.70	27.09
66	−1.66	33.73	75	−1.50	33.76	27.19
88	−1.36	33.80	100	−1.15	33.84	27.24
132	−0.52	33.98	150	−0.35	34.04	27.36
175	−0.03	34.11	200	0.50	34.22	27.47
263	2.26	34.48	300	2.70	34.55	27.57
370	3.01	34.62	400	2.95	34.62	27.61
574	1.62	34.57	(600)	1.45	34.56	27.68

Station 3980; 16 July; latitude 65°18′ N., longitude 57°50′ W.; depth 531 meters; dynamic height 1454.718

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.26	31.98	0	1.26	31.98	25.63
26	−0.42	33.36	25	−0.40	33.35	26.82
52	−1.13	33.64	50	−1.10	33.61	27.06
78	−1.20	33.79	75	−1.20	33.78	27.19
104	−0.75	33.93	100	−0.85	33.91	27.28
156	0.49	34.18	150	0.30	34.16	27.43
208	2.96	34.51	200	2.65	34.46	27.51
312	4.11	34.76	300	4.05	34.75	27.60
383	4.04	34.78	400	3.80	34.77	27.65
483	2.43	34.65				

Station 3981; 17 July; latitude 65°58′ N., longitude 58°22′ W.; depth 487 meters; dynamic height 1454.730

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.87	32.12	0	0.87	32.12	25.76
26	−1.03	33.38	25	−1.00	33.37	26.85
52	−1.56	33.63	50	−1.50	33.61	27.07
78	−1.69	33.72	75	−1.70	33.71	27.15
104	−1.44	33.78	100	−1.50	33.77	27.20
156	−0.57	33.97	150	−0.65	33.95	27.31
208	0.36	34.16	200	0.20	34.14	27.42
312	2.38	34.51	300	2.20	34.46	27.55
314	2.56	34.50	400	2.35	34.63	27.66
366	2.42	34.62				

Station 3982; 17 July; latitude 65°58′ N., longitude 58°22′ W.; depth 613 meters; dyuamic height 1454.788

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.02	32.30	0	1.02	32.30	25.90
26	0.32	32.62	25	0.35	32.61	26.19
51	−1.55	33.31	50	−1.50	33.29	26.80
77	−1.71	33.56	75	−1.70	33.54	27.01
102	−1.55	33.68	100	−1.55	33.67	27.12
152	−1.31	33.77	150	−1.35	33.76	27.18
204	−0.59	33.97	200	−0.70	33.96	27.32
306	1.52	34.33	300	1.40	34.31	27.49
396	2.51	34.54	400	2.50	34.54	27.58
589	1.70	34.55	600	1.65	34.55	27.66

Station 3983; 17 July; latitude 66° 22′ N., longitude 58°42′ W.; depth 732 meters; dynamic height 1454.818

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.70	31.23	0	0.70	31.23	25.06
26	−1.42	32.81	25	−1.40	32.80	26.41
52	−1.72	33.19	50	−1.70	33.16	26.70
77	−1.59	33.38	75	−1.60	33.38	26.88
103	−1.43	33.52	100	−1.45	33.51	26.99
154	−1.42	33.70	150	−1.45	33.69	27.13
206	−1.10	33.86	200	−1.20	33.84	27.24
309	0.70	34.23	300	0.55	34.20	27.45
404	1.87	34.46	400	1.85	34.45	27.56
605	0.96	34.48	600	0.95	34.48	27.64
706	0.80	34.48				

STATIONS OCCUPIED IN 1949—Continued

Station 3984; 17 July; latitude 66°48.5′ N., longitude 58°40′ W.; depth 1119 meters; dynamic height 1454.812

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	−0.93	31.56	0	−0.93	31.56	25.39
26	−1.56	33.00	25	−1.55	32.97	26.55
51	−1.66	33.28	50	−1.65	33.26	26.78
77	−1.71	33.45	75	−1.70	33.44	26.93
102	−1.74	33.54	100	−1.75	33.53	27.00
153	−1.61	33.69	150	−1.65	33.68	27.12
204	−1.20	33.84	200	−1.25	33.83	27.23
306	−0.31	34.12	300	−0.35	34.10	27.41
437	2.32	34.52	400	1.70	34.43	27.55
655	1.19	34.49	600	1.35	34.50	27.64
873	0.79	34.50	800	0.90	34.50	27.67
1,092	0.49	34.48	1,000	0.60	34.49	27.67

Station 3985; 18 July; latitude 67°11′ N., longitude 57°36′ W.; depth 651 meters; dynamic height 1454.755

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.37	32.06	0	0.37	32.06	25.74
25	−1.49	33.22	25	−1.49	33.22	26.75
50	−1.72	33.54	50	−1.72	33.54	27.01
76	−1.65	33.69	75	−1.65	33.69	27.13
101	−1.58	33.74	100	−1.60	33.74	27.17
150	−0.90	33.90	150	−0.90	33.90	27.28
200	0.16	34.10	200	0.15	34.10	27.39
301	1.82	34.41	300	1.80	34.41	27.54
384	2.32	34.52	400	2.30	34.52	27.59
593	1.48	34.51	600	1.45	34.51	27.64

Station 3986; 18 July; latitude 67°31.5′ N., longitude 57°52′ W.; depth 245 meters; dynamic height 1454.736

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	−0.52	31.76	0	−0.52	31.76	25.54
24	−0.57	32.68	25	−0.60	32.70	26.29
48	−1.00	33.73	50	−1.00	33.75	27.16
72	−0.72	33.90	75	−0.70	33.91	27.28
96	−0.31	33.98	100	−0.25	34.00	27.33
144	0.39	34.16	150	0.40	34.17	27.44
191	0.19	34.21	200	0.20	34.21	27.48
225	0.18	34.20				

Station 3987; 18 July; latitude 67°59′ N., longitude 57°03′ W.; depth 289 meters; dynamic height 1454.732

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.43	32.65	0	2.43	32.65	26.08
25	1.56	32.79	25	1.56	32.79	26.26
49	−1.70	33.73	50	−1.70	33.73	27.16
74	−1.25	33.86	75	−1.25	33.86	27.26
99	−0.21	34.00	100	−0.20	34.00	27.33
147	0.10	34.14	150	0.15	34.14	27.42
196	0.48	34.22	200	0.50	34.23	27.47
274	1.21	34.35				

Station 3988; 18 July; latitude 68°26′ N., longitude 56°54′ W.; depth 340 meters; dynamic height 1454.697

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.36	33.60	0	3.36	33.60	26.76
23	3.35	33.60	25	3.30	33.61	26.77
46	2.40	33.84	50	2.10	33.86	27.07
69	0.63	33.91	75	0.35	33.94	27.25
92	−0.17	34.01	100	0.00	34.04	27.35
138	0.98	34.18	150	1.10	34.21	27.43
184	1.56	34.30	200	1.70	34.34	27.48
276	2.34	34.50	(300)	2.55	34.55	27.59

Station 3989; 19 July; latitude 68°46.5′ N., longitude 58°56′ W.; depth 432 meters; dynamic height 1454.747

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.01	32.37	0	1.01	32.37	25.96
26	−1.35	33.36	25	−1.30	33.30	26.80
54	−1.67	33.67	50	−1.65	33.62	27.08
80	−1.54	33.79	75	−1.60	33.77	27.20
135	−0.51	33.91	100	−1.30	33.82	27.23
189	0.79	34.15	150	−0.15	33.97	27.31
296	2.50	34.52	200	1.00	34.18	27.40
92	−1.44	33.81	300	2.55	34.41	27.48
292	2.42	34.40	(400)	2.90	34.50	27.52

Station 3990; 19 July; latitude 69°06.5′ N., longitude 59°56′ W.; depth 1551 meters; dynamic height 1454.768

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.86	32.50	0	0.86	32.50	26.07
25	−1.29	33.01	25	−1.29	33.01	26.57
50	−1.75	33.52	50	−1.75	33.52	27.00
75	−1.77	33.60	75	−1.77	33.60	27.06
100	−1.75	33.63	100	−1.75	33.63	27.08
150	−1.40	33.78	150	−1.40	33.78	27.19
200	−0.95	33.89	200	−0.95	33.89	27.27
300	1.18	34.28	300	1.18	34.28	27.47
357	1.44	34.36	400	1.35	34.38	27.51
543	0.96	34.42	600	0.85	34.44	27.62
736	0.65	34.50	800	0.50	34.49	27.68
933	0.15	34.47	1,000	0.05	34.47	27.70
1,417	−0.32	34.50	(1,500)	−0.40	34.50	27.74

Station 3991; 19 July; latitude 69°33′ N., longitude 59°23′ W.; depth 1157 meters; dynamic height 1451.739

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	−0.20	32.88	0	−0.20	32.88	26.43
26	−1.36	33.18	25	−1.35	33.18	26.71
52	−1.75	33.64	50	−1.75	33.62	27.08
78	−1.71	33.66	75	−1.75	33.66	27.11
104	−1.56	33.74	100	−1.60	33.73	27.16
156	−0.90	33.85	150	−1.00	33.84	27.23
208	−0.04	34.03	200	−0.20	34.00	27.33
312	2.44	34.48	300	2.15	34.43	27.52
392	3.32	34.64	400	3.30	34.64	27.59
589	1.80	34.54	600	1.75	34.54	27.65
786	0.95	34.505	800	0.90	34.50	27.67
984	0.36	34.485	1,000	0.30	34.49	27.69
1,130	0.04	34.49				

Station 3992; 19 July; latitude 69°51.5′ N., longitude 59°01′ W.; depth 302 meters; dynamic height 1454.710

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	0.62	32.74	0	0.62	32.74	26.28
25	−1.52	33.37	25	−1.52	33.37	26.87
49	−1.66	33.70	50	−1.65	33.70	27.14
74	−1.60	33.79	75	−1.60	33.79	27.21
98	−1.60	33.82	100	−1.60	33.82	27.24
147	−0.02	34.01	150	0.05	34.02	27.34
197	1.13	34.23	200	1.15	34.25	27.45
289	2.35	34.50	(300)	2.45	34.52	27.57

STATIONS OCCUPIED IN 1949—Continued

Station 3993; 19 July; latitude 70°03′ N., longitude 58°41′ W.; depth 308 meters; dynamic height 1454.716

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	1.07	32.42	0	1.07	32.42	26.00
23	−1.45	33.44	25	−1.50	33.47	26.96
48	−1.71	33.68	50	−1.70	33.69	27.13
71	−1.75	33.73	75	−1.75	33.74	27.17
96	−1.68	33.76	100	−1.65	33.77	27.20
143	−0.64	33.91	150	−0.35	33.96	27.30
190	0.95	34.18	200	1.10	34.22	27.44
286	2.35	34.48	(300)	2.55	34.51	27.56

Station 3994; 20 July; latitude 70°11′ N., longitude 57°49′ W.; depth 331 meters; dynamic height 1454.706

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.03	32.82	0	2.03	32.82	26.25
27	−1.51	33.61	25	−1.35	33.60	27.05
52	−1.76	33.73	50	−1.75	33.72	27.16
79	−1.65	33.75	75	−1.70	33.74	27.17
104	−1.08	33.84	100	−1.20	33.82	27.22
157	0.33	34.04	150	0.10	34.01	27.32
209	1.68	34.34	200	1.45	34.30	27.47
313	2.60	34.54	300	2.50	34.52	27.57

Station 3995; 20 July; latitude 70°18′ N., longitude 57°12′ W.; depth 289 meters; dynamic height 1454.720

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.08	32.87	0	2.08	32.87	26.28
25	0.68	33.08	25	0.68	33.08	26.54
50	−1.38	33.74	50	−1.38	33.74	27.16
75	−1.68	33.79	75	−1.68	33.79	27.21
100	−1.49	33.80	100	−1.49	33.81	27.23
149	0.20	34.01	150	0.20	34.01	27.32
199	1.37	34.24	200	1.40	34.25	27.44
274	2.36	34.47	-------	-------	-------	-------

Station 3996; 20 July; latitude 70°25′ N., longitude 56°35′ W.; depth 214 meters; dynamic height 1454.709

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.90	33.28	0	2.90	33.28	26.55
26	1.11	33.54	25	1.15	33.53	26.87
51	−0.95	33.74	50	−0.90	33.73	27.14
76	−1.40	33.80	75	−1.40	33.80	27.21
101	−0.88	33.88	100	−0.95	33.87	27.26
151	−0.12	34.01	150	−0.15	34.01	27.34
210	1.39	34.27	200	1.10	34.22	27.44

Station 3997; 20 July; latitude 70°30′ N., longitude 56°06′ W.; depth 131 meters; dynamic height 1454.711

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	2.74	33.30	0	2.74	33.30	26.57
25	2.54	33.38	25	2.54	33.38	26.65
50	−0.60	33.80	50	−0.60	33.80	27.18
75	−0.86	33.86	75	−0.86	33.86	27.24
110	−0.70	33.92	100	−0.75	33.90	27.27

Station 3998; 20 July; latitude 70°35.5′ N., longitude 55°34′ W.; depth 247 meters; dynamic height 1454.708

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.84	33.23	0	3.84	33.23	26.41
25	1.67	33.54	25	1.67	33.54	26.85
50	−1.11	33.80	50	−1.11	33.80	27.21
75	−0.88	33.89	75	−0.88	33.89	27.27
100	−0.43	33.94	100	−0.43	33.91	27.29
149	1.36	34.25	150	1.40	34.26	27.45
199	2.03	34.40	200	2.05	34.40	27.51
224	2.11	34.41	-------	-------	-------	-------

Station 3999; 20 July; latitude 70°38.5′ N., longitude 55°01′ W.; depth 426 meters; dynamic height 1454.728

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	σ_t
0	3.58	33.14	0	3.58	33.14	26.37
25	0.54	33.54	25	0.54	33.54	26.92
50	−1.61	33.73	50	−1.61	33.73	27.16
75	−1.64	33.77	75	−1.64	33.77	27.20
100	−1.40	33.82	100	−1.40	33.82	27.23
150	−0.09	34.00	150	−0.09	34.00	27.32
200	0.89	34.18	200	0.89	34.18	27.41
300	2.09	34.42	300	2.09	34.42	27.52
399	2.58	34.54	400	2.60	34.54	27.57

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U. S. TREASURY DEPARTMENT - - - COAST GUARD

BULLETIN No. 36

INTERNATIONAL ICE OBSERVATION AND ICE PATROL SERVICE IN THE NORTH ATLANTIC OCEAN - [SEASON of 1950]

U. S. TREASURY DEPARTMENT
COAST GUARD

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INTERNATIONAL ICE OBSERVATION AND ICE PATROL SERVICE

IN THE

NORTH ATLANTIC OCEAN

L. A. CHENEY
FLOYD M. SOULE

CG-188-5

Season of 1950

UNITED STATES
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Merlin O'Neill

MERLIN O'NEILL,
Vice Admiral, U. S. Coast Guard
Commandant.

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FOREWORD

This is a report of the work of the International Ice Patrol during the 1950 season. Annual reports such as this have been published since 1913 with the exception of the years 1917, 1918, 1942, 1943, 1944, and 1945 in which years no international patrol was conducted. As mentioned in previous bulletins of this series, the reports form the continuing story of the history and development of the ice patrol service. No single report by itself attempts to settle all the problems and controversies associated with ice patrol but different bulletins have attempted to present and solve one or two problems each year. To fully understand the history and problems of the ice patrol, the reader is referred to the previous bulletins of this series.

Early in the history of the ice patrol the problems of locating ice and disseminating the necessary information were solved. However, the advent of new inventions and new techniques have greatly improved the efficiency of the ice patrol. The inauguration of dynamic oceanographic studies in the 1920's was a great step forward and subsequent work in this field during the ice-patrol seasons has continuously added to the efficiency of the patrol. At the end of the war in 1945, radar and the long-range airplane were sufficiently well developed to be used for ice patrol purposes and have been so used every season since then. Thus there has been a continuing effort through the years to study the problems affecting ice patrol and to apply the solutions to actual practice.

That part of the report entitled "Physical Oceanography of the Grand Banks Region and the Laborador Sea in 1950" was prepared by Floyd M. Soule, Oceanographer, and that part dealing with the activities of the patrol other than oceanography was prepared by Lt. Leroy A. Cheney, USCG.

INTERNATIONAL ICE PATROL 1950

As set forth in the Convention for Promoting Safety of Life at Sea signed at London on May 31, 1929, a service of ice patrol and a service for study and observation of ice conditions in the North Atlantic is maintained for the principal maritime nations by the United States Coast Guard acting as the agent of the United States Government. This service has been inaugurated annually in the early spring of each year since 1913 except for the unavoidable interruptions of two great wars. Over this period of some thirty-odd years instruments and techniques have improved and as a natural consequence the quality of the service offered to mariners in the form of an ice patrol has also improved. However, the underlying principle of ice patrol that forewarning merchant ships of ice in their path is the best preventive against disaster is the same today as it was the first year an ice patrol cutter put to sea to inaugurate an organized patrol.

The attainment of this principle in practice is accomplished by giving mariners, who are in or about to traverse the area where ice may be a threat to life and property, the most complete information on ice that it is practicable to provide. Collection, collation, and dissemination of ice information are the three processes involved in reaching this objective. Ice information is collected from reports from merchant vessels, sightings by surface craft and aircraft of the International Ice Patrol, reports from shore stations, and reports from naval surface craft and aircraft. Since the last war collation of this ice information has been done in the ice patrol office at Argentia, Newfoundland, which is also the base for the ships and planes of the ice patrol. This centralization of functions in the office at Argentia allows the reports of the aerial observers to be compared with reports received from merchant ships and other sources immediately upon return of the aircraft. All these reports are checked for duplication insofar as is practicable and the information is condensed into a single bulletin.

Ice reports must be transmitted promptly to be of maximum usefulness and it is because of this time factor that radio is used both for the collection and the dissemination of ice information. The radio call sign of the International Ice Patrol (NIDK) is guarded by the patrol cutter in the area. Prior to the inauguration of a continuous surface-vessel patrol the Coast Guard Radio at Argentia, radio call

(NIK), accepts ice reports and at all times accepts traffic for NIDK should a vessel be heard calling and unable to establish communication with the patrol cutter. Ice information is disseminated by means of regularly scheduled NIK ice bulletins. Occasional safety (TTT) broadcasts are made upon receipt of the information in cases where ice is discovered in a position of unusual hazard and especially if the ice patrol vessel (NIDK) is guarding a berg that has drifted into or is about to drift into a steamer lane.

Ice patrol activities generally start with the opening of the ice patrol office at Argentia in February and the commencement of aerial reconnaissance. When ice is present in sufficient quantity or when the advancing season would lead mariners to expect ice and make radio inquiries regarding ice conditions, the series of twice-daily NIK ice bulletin broadcasts is initiated. When the ice situation warrants, a continuous surface patrol is inaugurated and the inauguration is formally announced in the NIK ice bulletin broadcast. In the Grand Banks area, visibility deteriorates with the advancing season and during a light ice year or one when the ice is late in arriving and under conditions when continued poor visibility prevents the ice patrol office from following the ice situation with sufficient continuity by means of aerial reconnaissance, surface craft are employed for ice observation. A distinction is made between ice observation and ice patrol. Ice Patrol is a continuous surface-vessel patrol. Ice observation cruises may be intermittent or continuous as required to supplement aerial reconnaissance in determining when a continuous patrol may become necessary. Trained ice observers from the ice patrol office participate in the aerial reconnaissance flights, and, whenever possible, a trained ice observer is assigned to the cutters on ice-observation cruises and ice patrol. When the series of ice bulletin broadcasts is inaugurated, mariners are requested to furnish NIK or NIDK four-hourly reports when they are in the area bounded by latitudes 39° N., and 49° N., and longitudes 43° W., and 54° W. These reports should contain the position, course, speed, water and air temperatures, visibility, wind and sea conditions, and any ice sighted. These four-hourly reports are collected by the ice patrol office and the cutters until the end of the season. They form the basis of ship plots and surface isotherm plots, aid in the evaluation of flying weather in the Grand Banks area and materially assist in determining the movement and disintegration of ice.

For the 1950 season Capt. John A. Glynn, USCG was Commander, International Ice Patrol. Lt. Comdr. Edwin C. Crosby, USCG was the senior aviator in charge of the ice patrol aircraft. Ice patrol cruises were made by the *Acushnet* commanded by Capt. Frank K. Johnson, USCG and the *Tampa* commanded by Comdr. Howard A. Morrison, USCG. Oceanographic cruises were made by the *Evergreen* under the command of Lt. Comdr. Gordon P. Hammond, USCG.

The position of ice patrol officer was held by Lt. William J. Zinck, USCG until 29 April when he was relieved by Lt. (jg) Sam Pisicchio, USCG who held the position until the end of the season. Lt. Rufus S. Drury, USCG and Lt. (jg) Vance K. Randle, USCG were ice observers participating in aerial reconnaissance flights. Because of lack of personnel no observers were placed on board the ice patrol cutters this year. The planning and execution of the oceanographic program were in the hands of Oceanographer Floyd M. Soule who was assisted in oceanographic work by Lt. Leroy A. Cheney, USCG.

A brief summary of the 1950 season is as follows: Aerial reconnaissance began 22 February. The first of the regularly scheduled ice bulletins was broadcast at 1318 G. C. T. on 6 March and at the same time three-hourly ship reports were requested. Bergs threatened shipping on track C in March and a recommendation was made that track C be shifted to track B prior to 11 April. This shift was made on 24 March. The continuous ice patrol was inaugurated by the *Acushnet* on 27 March. The 5 ice patrols were made by the *Acushnet* 24 March–19 April, 2–20 May, 3–10 June, and by the *Tampa* 16 April–5 May, 18 May–5 June. Aerial reconnaissance was concluded on 26 June which date was the official termination date of ice patrol activities for the 1950 season.

On their various patrols the ice patrol cutters have noticed that many vessels do not submit four hourly reports when in the area. Mariners are urged to make these reports if it is at all possible both in the interest of their own safety as well as for the greater safety of all which results from a better informed ice patrol. In the 1950 season 296 ships made reports to the ice patrol. The percentages of vessels representing the different nationalities were as follows: 38 percent British, 17 percent United States, 12 percent Norwegian, and the remaining 26 percent were divided between Sweden, Canada, Panama, Denmark, France, Netherlands, Greece, Portugal, Italy, Iceland, Ireland, Finland, Liberia, Turkey, and Poland.

AERIAL ICE RECONNAISSANCE

Again this year two winterized PB1G (flying fortress) planes were available for ice observation throughout the entire season. The use of aircraft has proven a valuable aid in ice patrol work. Total plane hours for this season was 589.6. Distribution of plane hours for the various months is shown in figure 1.

A total of 75 ice observation flights was made by the 2 aircraft plus 3 postseason flights when 1 berg threatened track C between 15 and 23 July.

Individual flights varied in duration from 1.5 to 11 hours. The average flight for the season was 7.8 hours. Assuming an average ground speed of 150 knots for PB1G aircraft, the total distance flown in the 1950 season was 88,440 miles. Flight courses are usually laid

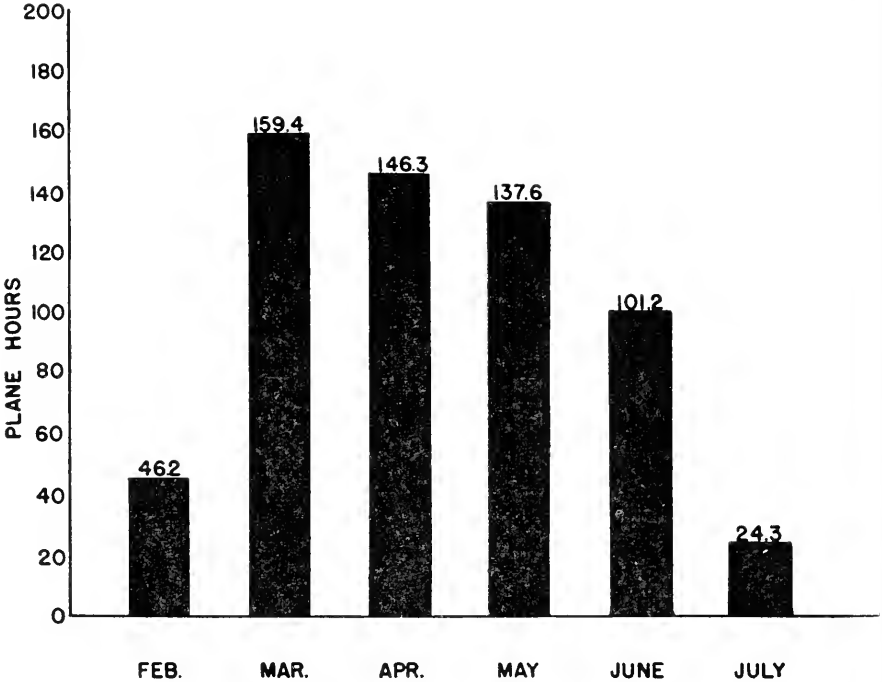

FIGURE 1.—Distribution of plane hours, 1950.

out 25 miles apart and the area covered was estimated as 2,211,000 square miles. Very seldom did it happen that visibility was good enough to completely search the area of any flight. It was estimated that the actual area covered by aerial reconnaissance for this season was approximately 1,700,000 square miles. The guiding principle in planning flights was to cover the Grand Banks area from south to north, repeating the procedure every 2 to 3 days. Weather in the Grand Banks area was bad for aerial reconnaissance about 70 percent of the time because of fog, low stratus, and storms, and a systematic search of the area every 2 to 3 days was seldom accomplished in practice. Flights were made 2 days in succession on 19 occasions this season. The intervals in days between flights aside from these 19 occasions varied from 1 to 8 days. These intervals with the corresponding frequency of occurrence are as follows:

Intervals:	*Frequency*
1	7
2	5
3	10
4	4
5	1
8	1

Loran is the principal means of navigation for the aircraft used on ice observation flights and a usual procedure is to take loran readings every 5 to 10 minutes. In previous years this procedure has proven to be satisfactory and would have been satisfactory this season except for the fire at the loran station at Battle Harbor, Labrador, on 26 February, as result of which loran rates 1L3 and 1L4 went off the air. On 21 March they were placed back in operation with reduced power. During the period they were off the air, great difficulty was experienced in navigating the aircraft with the accuracy required for ice patrol work. After the two rates were back in operation with reduced power it was possible to navigate with greater accuracy. It wasn't until 13 July after the ice patrol had been terminated that rates 1L3 and 1L4 were back on the air with full power.

ICE CONDITIONS IN 1950

JANUARY

Few ice reports were received in January and consequently very little is known about the general movements of ice in the Grand Banks area for this month. The first report of ice in the area came from a flight made by the United States Coast Guard Air Detachment, Argentia, Newfoundland, on the 21st of January. On that date the outer limits of drift ice were from Fogo Island to 49°45′ N., 53°30′ W., to Cape Bonavista. Only 7 days later on the 28th of January the U. S. C. G. C. *Chincoteague* reported continuous field ice from approximately 53°00′ N., 51°00′ W., to 49°00′ N., 51°00′ W. A slow easterly and southerly movement of the drift ice continued for the remaining 3 days of the month until on 31 January the outer limits were defined by a line from Cape Bonavista to 49°40′ N., 49°50′ W., to 50°00′ N., 49°50′ W.

During this month, three ice observation flights were made by the United States Coast Guard Air Detachment, Argentia, Newfoundland, on the 21st, the 22d, and 31st. The flights of the 22d and 31st scouted the southeastern, eastern, and northern portions of the 100 fathom curve in the Grand Banks area to determine if any ice or icebergs had been carried into threatening positions by the Labrador Current. From the results of these two flights it was concluded that there was no immediate menace to trans-Atlantic shipping.

It is estimated that no icebergs came south of 48° N., during the month of January. Distribution of pack ice for the month of January is shown graphically in figure 2.

FEBRUARY

The easterly and southerly movement of drift ice continued in February approximating a rate of 5 miles per day during the first week. Accompanying this movement there was a southward drift off the east coast of the Avalon Peninsula. By the 9th of February

the outer limits of drift ice were from 46°26′ N., 53°10′ W., to 47°26′ N., 49°20′ W., to 47°26′ N., 47°50′ W. The first berg reported in the Grand Banks area for the 1950 season was reported by the steamship *Danaholm* in position 47°38′ N., 48°04′ W. It was reported again on the 14th in 46°55″ N., 46°43′ W., and apparently disappeared to the south of Flemish Cap shortly thereafter.

Occasional reports indicated that drift ice continued its southward movement until it reached a maximum southerly limit at 45°35′ N., 48°12′ W., on the 20th and 45°20′ N., 51°30′ W., on the 21st. A small number of bergs accompanied this drift and on the 20th one was reported in position 45°47′ N., 48°34′ W. This was the first sign that any bergs had rounded the northeastern shoulder of the Grand Banks and were being carried southward by the Laborador Current to the vicinity of the Tail of the Grand Banks. Shortly afterward, on the 23d, a berg was reported in 43°25′ N., 49°37′ W., which berg was a definite threat to trans-Atlantic shipping on track C. It was again reported on the 24th, 30 miles to the southeast in 43°14′ N., 49°04′ W. As soon as weather would permit, a plane was sent to the area to locate this berg on the 26th but no ice was sighted. No further ship reports were received on this berg and it was concluded that it disintegrated shortly after the report of the 24th under the combined influences of the relatively warm Atlantic Current and the buffeting of a gale with 75-knot winds which swept the area that same date.

For the month of February, drift ice was never reported south of the positions of the 20th and the 21st. A limiting line for drift ice at the end of the month could be drawn from 46°15′ N., 52°30′ W., to 47°40′ N., 46°40′ W., with only occasional patches reported to the south of this line. Westerly winds during the month generally kept the east coast of the Avalon Peninsula free for navigation. Reports of ice in Cabot Strait and the Gulf of St. Lawrence were practically nonexistent. The only report received indicated that some drift ice had reached the vicinity of Misaine Bank on the 21st.

During February, five ice observation flights were made. It is estimated that 12 bergs came south of 48° N. Distribution of pack ice and icebergs for the month of February is shown graphically in figure 2.

MARCH

Early in March there was a movement of bergs to the east of 46° W., north of Flemish Cap. This continued for the first 2 weeks and then the drift of bergs tended to be south along the eastern edge of the Grand Banks with some movement to the east just south of Flemish Cap. On 6 March, three bergs were reported in the positions 49°18′ N., 44°44′ W.; 49°11′ N., 45°10′ W.; 48°40′ N., 45°58′ W. This easterly drift of bergs was confirmed by sightings on the 8th of two bergs in 48°52′ N., 45°56′ W.; 48°53′ N., 45°39′ W., and again by a

sighting on the 16th of a berg 47°45′ N., 45°15′ W. An ice observation flight on the 21st sighted two bergs in 46°24′ N., 45°58′ W., and 46°30′ N., 45°48′ W. Both the reports on the 6th and the sightings on the 21st foreshadowed the large number of bergs which later in the season inundated the Flemish Cap area. One of the bergs sighted 21 March drifted into track C on 22 March and was sighted in 46°12′ N., 45°19′ W. Since other bergs were sighted in this area also threatening shipping on track C a recommendation was made to shift the effective track from C to B which shift was accomplished 24 March. After the 22d, the number of reports and sightings of bergs south of 47° N., increased and by the 31st several bergs were sighted in the vicinity of 45°20′ N., 48°35′ W., and a growler at 45°02′ N., 48°42′ W. More bergs were continually entering the area and at the end of the month approximately 40 bergs were strung out along the 100-fathom curve between 47°00′ N., 47°30′ W., and 49°00′ N., 51°00′ W.

For the first 8 days in March the limits of drift ice remained approximately the same as those at the end of February. Then a gradual movement south was observed and drift ice limits were defined on the 12th by a line from 46°20′ N., 52°20′ W., to 45°50′ N., 48°00′ W. On this same date, drift ice reached its maximum easterly limit of the season in 46°30′ N., 45°35′ W. For March the entire northern part of the Grand Banks was covered by drift ice varying from loose drift ice at its southern limits to close pack ice at the northern extremity of the 100-fathom curve and covering an area from 50 miles seaward of the 100-fathom curve to the east coast of the Avalon Peninsula. Its southward progress was continuous throughout the month and the northern half of the Grand Banks was covered by pack ice on the 23d when its southern limits were defined by a line from 46°00′ N., 52°00′ W., to 44°30′ N., 49°00′ W., to 45°30′ N., 48°40′ W. Patches of pack ice drifted as far south as 44°00′ N., on the 28th and 43°20′ N., on the 31st.

Ice conditions along the east coast of the Avalon Peninsula were essentially the same as those in February with drift ice extending at times south of Cape Race to 46°10′ N., and disappearing from the coast by the end of March. Very little appeared to the west of Cape Race except for some slush and sludge reported on the 6th in the vicinity of Cape Pine. From the 8th of March on reports of ice in Cabot Strait increased in frequency. On this latter date the limits were from Scatari Island to 45°30′ N., 59°35′ W., to 45°36′ N., 57°45′ W., to 46°00′ N., 57°10′ W., to 46°55′ N., 57°45′ W., to Cape Ray. Its maximum seaward extension for the month occurred on the 21st when it reached the vicinity of 44°20′ N., 57°00′ W. It remained in this vicinity until the 28th when its southeastern limits were from 44°30′ N., 58°40′ W., to 44°35′ N., 57°30′ W., to 45°00′ N., 56°50′ W.

It is estimated that 61 bergs came south of 48° N., in March. The

distribution of pack ice and icebergs for this month is illustrated graphically in figure 3. In March, 18 ice observation flights were made.

APRIL

The bergs reported in March in the vicinity of 45°20′ N., on the eastern edge of the Grand Banks continued their southward travel in April and began to arrive at the Tail of the Grand Banks by the middle of the month. Some bergs were stranding along the 50-fathom curve as they travelled southward. On the 28th, the sighting of a berg and two growlers in the vicinity of 43°10′ N., 47°57′ W., was the first sign aside from the berg reported 24 February, that any ice had entered the large counterclockwise eddy between the Labrador Current and the Atlantic Current. In April, no bergs were reported to the west of 50°00′ W., in latitude 43°00′ N., and those reported east of 50°00′ W., in all likelihood disintegrated in the aforementioned eddy.

The danger of bergs east of Flemish Cap which had been foreshadowed in March materialized in the latter half of April. The first indication that any bergs were to the east of Flemish Cap was the sighting of a berg in 46°46′ N., 44°16′ W., by ice patrol aircraft on the 17th. Between the 17th and the 22d there were numerous reports of bergs in this area. This eastward drift continued through the remainder of April and on into May. It was restricted in April to an eastward drift of bergs between the latitudes 46°30′ N., and 48°00′ N. In March there had been a drift of bergs south and east of Flemish Cap but this did not occur in April. At the end of the month the southernmost ice was the berg and two growlers reported on 28 April in the vicinity of 43°10′ N., 47°57′ W., and the easternmost ice was several growlers reported on the 30th in 47°03′ N., 44°15′ W.

Late in March pack ice had covered the northern half of the Grand Banks but by 3 April the only drift ice reported south of 46°30′ N., was a tongue of ice extending from approximately 46°30′ N., 47°00′ W., to 44°40′ N., 48°40′ W. This tongue disappeared within 10 days and on 13 April the only drift ice south of 47°10′ N., was a small patch reported in 46°10′ N., 46°50′ W. The movement of drift ice tended to follow the contour of the 100-fathom curve and as April progressed the southern limits of drift ice retreated northward along the 100-fathom curve reaching the position 47°35′ N., 48°30′ W., on the 21st and virtually disappearing from the Grand Banks area south of 48°00′ N., by the end of the month. For the rest of the season drift ice was not considered a danger to trans-Atlantic shipping. Drift ice in Cabot Strait gradually receded from its maximum seaward extension on 31 March at 56°50′ W., to 57°20′ W., on 5 April to 58°00′ W., on 15 April to 58°50′ W., on 22 April and for the last week of April it was west of 59°00′ W. The southernmost latitude for drift ice in this

area was reported on 17 April when it was 25 miles north of Sable Island. At the end of April the limits of drift ice were from 20 miles east of St. Paul to 46°40′ N., 59°10′ W., to 46°00′ N., 59°00′ W., to 45°00′ N., 59°10′ W.

During April, 19 ice observation flights were made. It is estimated that 183 bergs came south of 48° N. The distribution of pack ice and icebergs for April is illustrated graphically in figure 4.

MAY

As the month began, bergs were once more observed drifting south and east of Flemish Cap in a similar manner to those observed in March. In March no oceanographic observations were available to explain the nature of this movement but in May the *Evergreen* made an oceanographic cruise along the south, southeastern, and eastern edge of the Grand Banks. In this month the Atlantic Current salient in the vicinity of 45° N., formed an effective block to the Labrador Current by reducing the volume of Labrador Current water which flowed south to the vicinity of the Tail of the Grand Banks and by diverting part of the Labrador Current to the eastward north of this latitude. Further details are contained in the oceanographic section of this bulletin. This diversion of the Labrador Current resulted in four bergs moving to the eastward where they were sighted by an ice patrol aircraft in 44°08′ N., 43°12′ W.; 45°04′ N., 44°11′ W.; 45°35′ N., 44°35′ W.; 46°12′ N., 43°18′ W., on 11 May. The berg sighted in 44°08′ N., 43°12′ W., was a real danger to shipping traveling on track B and the other three bergs were a potential danger. At this same time it was evident that a current of cold water was flowing eastward over and north of Flemish Cap because a berg was sighted in 47°20′ N., 30°17′ W., and two bergs in 46°50′ N., 40°53′ W., on 19 May. These bergs were in track B. Although they were reported as bergs and one as being 200 feet high they apparently disintegrated rapidly as no further reports of them were received.

Toward the end of the month the Atlantic Current salient had degenerated sufficiently to allow bergs to be carried south past the 45th parallel and one was sighted in 44°19′ N., 48°29′ W., on 26 May. At the end of May, reports of bergs east and southeast of Flemish Cap had ceased. The ice-patrol vessel reported that on 28 May the berg sighted 26 May in 44°19′ N., 48°29′ W., was no longer a menace. Throughout the month bergs were reported along the 100-fathom curve on the eastern edge of the Grand Banks from 44°00′ N., to 48°00′ N. Berg conditions along the 100-fathom curve were not well observed during May because aircraft flights were hampered by almost zero visibility from 12 May through 28 May. Ship reports were the sole source of information for this period and it is emphasized here that ship reports are vital sources of information

for the ice patrol organization and are essential for the successful functioning of any ice warning service.

Ice movement along the east coast of the Avalon Peninsula did not develop until late May. On 6 May, nine bergs were sighted in a square bounded by latitudes 46°50′ N., and 48°00′ N., and longitudes 50°00′ W., and 52°00′ W. Nothing further was learned about bergs in this area until 25 May when several ship reports of three bergs in the area were received. Bergs were reported on 28 May in 47°00′ N., 52°55′ W. Occasional reports of bergs and growlers south of 47° N., and west of 52° W., continued to be received through the end of the month and the movement of bergs south along the east coast continued throughout the rest of the season.

The first report of drift ice in May was from an ice patrol aircraft which reported drift ice on 6 May extending from the vicinity of Cape St. Francis to 48°00′ N., 52°00′ W., to 48°35′ N., 51°00′ W., and thence northwest past Funk Island. Its northward retreat continued through May until its limits on 29 May were from the vicinity of Cape Bonavista to 48°45′ N., 52°30′ W., thence northwest. At no time was it a hazard to trans-Atlantic shipping. Drift ice in Cabot Strait disappeared rapidly in May and on 16 May all routes to the Gulf of St. Lawrence were reported clear for navigation and reports by the Canadian Department of Commerce were discontinued.

In May, it was estimated that 135 bergs drifted south of 48° N. In this month, 19 ice observation flights were made. The distribution of pack ice and icebergs for the month of May is shown graphically in figure 5.

JUNE

Continuing the general check of the Grand Banks area started on 30 May, two flights on 1 June covered the area between 46°00′ N., and 49°30′ N. The only ice sighted east of 50°30′ W., was a berg in 46°29′ N., 49°01′ W., which was tracked by the *Tampa*. This berg was in shoal water on the Grand Banks and by 4 June it had drifted to 46°19′ N., 48°30′ W., and was breaking up rapidly. Flights were made on 7, 8, and 9 June to cover the Grand Banks area from 42°00′ N., to 52°00′ N., in an endeavor to locate any ice menace, potential or real, which could conceivably endanger trans-Atlantic shipping. No ice was sighted east of 50°00′ W., or south of 47°00′ N., therefore the ice patrol cutter was withdrawn on 10 June.

Bergs were sighted on the 20th in 48°18′ N., 50°11′ W.; 48°28′ N., 47°56′ W.; 48°38′ N., 48°11′ W., which positions indicated an eastward drift. Since the flights on 7, 8, 9, and 20 June revealed no ice which was considered to be a menace to trans-Atlantic shipping, the activities of the International Ice Observation and Ice Patrol Service, season of 1950 were terminated 26 June. Bergs were again reported

on 27 June in 47°32′ N., 48°02′ W.; 47°33′ N., 48°06′ W.; 47°44′ N., 48°58′ W.; 48°31′ N., 48°12′ W., but their movement between 27 June and 1 July was unknown because there were no ship reports for these 3 days.

At the beginning of June several bergs were reported in the vicinity of Cape St. Francis and some of these drifted south along the east coast of the Avalon Peninsula in the following 2 weeks. The southernmost berg along this coast was reported 16 June in 47°07′ N., 52°31′ W., but this soon disappeared and on 20 June when aircraft searched this area no bergs or growlers were sighted between Cape Race and Cape St. Francis. There was only one known instance of a berg rounding Cape Race and drifting westward. This berg was reported as a growler 25 June in 46°35′ N., 55°57′ W., but to reach this westerly position it was concluded that it must have been a berg at the time of passing Cape Race.

It is estimated that 58 bergs came south of 48° N. in June. During this month 14 ice observation flights were made. The distribution of bergs for this month is shown graphically in figure 6.

JULY

A berg and growler were reported 1 July in 47°36′ N., 48°22′ W., on the 100-fathom curve. It was estimated that this berg was the one previously sighted 27 June in 47°44′ N., 48°58′ W., and that instead of drifting east and north of Flemish Cap as is usual at this time of year it was following the route bergs travelled at the height of the season. This berg was reported on 7 July in 46°45′ N., 47°40′ W., and on 10 July in 46°17′ N., 47°50′ W. Before it could invade track C, the *Evergreen* was recalled from her postseason oceanographic cruise and located the berg in 45°28′ N., 47°58′ W., on 16 July. This berg was tracked from 16 July through 23 July on which date it was no longer considered a danger to shipping. Its drift between 16 July and 23 July was 120° T, approximately 65 miles or 9 miles per day.

Toward the last of July, several bergs were reported south of the 49th parallel in the vicinity of the 100-fathom curve at 50°00′ W. Occasional reports were received that bergs were drifting eastward north of Flemish Cap. Of the group reported between the 24th and 30th in the vicinity of 48°30′ N., 50°30′ W., at least one reached the Tail of the Grand Banks in August. An aircraft reported three bergs 23 July in 46°14′ N., 54°17′ W., which was the second time in 1950 that bergs were reported west of Cape Race.

It is estimated that seven bergs came south of 48° N., in July. Between the 21st and the 25th, three ice reconnaissance flights were flown. The distribution of bergs for this month is shown in figure 7.

AUGUST

By 5 August a berg had reached 46°38′ N., 47°38′ W. It was reported in 45°21′ N., 49°10′ W., on 8 August and 44°35′ N., 48°25′ W., on 11 August. The U. S. C. G. C. *Acushnet* was ordered to stand by this berg and located it 12 August in 44°08′ N., 48°57′ W. On 19 August, the U. S. C. G. C. *Cook Inlet* relieved the U. S. C. G. C. *Acushnet*. The following day the U. S. C. G. C. *Evergreen* relieved the U. S. C. G. C. *Cook Inlet* and drifted with the berg until its final disintegration on 24 August in 43°22′ N., 48°45′ W.

It is estimated that no bergs came south of 48° N., in August and that those bergs reported south of 48° N., in August had crossed the 48th parallel late in July. The distribution of bergs for the month of August is shown in figure 7.

SEPTEMBER–DECEMBER

It is estimated that one berg came south of 48° N., in September and October, two in November, but that none came south of 48° N., in December.

SUMMARY OF ICE CONDITIONS 1950

Compared with the Ice Atlas of the Northern Hemisphere [1] drift ice for the season of 1950 reached its maximum limits earlier than usual and disappeared from the Grand Banks area earlier than usual. By the end of January pack ice extended 50 to 60 miles seaward of the average limits published in the Ice Atlas. It moved southward in February and March covering the northern part of the Grand Banks and reaching its southernmost limits for the season on 31 March when it was reported in 43°20′ N. latitude on the eastern edge of the Grand Banks. By the end of April, when pack ice in this region usually attains its maximum southerly position, it had disappeared from the area south of 48° N. A rapid recession to the northwest was observed in May with pack ice limits generally 60 to 100 miles north and west of the average limits. Only scattered patches of drift ice were reported in Notre Dame Bay on 6 June and thereafter it disappeared rapidly from that area and no further reports of drift ice were received.

The distribution of bergs was normal for this year with one exception. In March, bergs were reported just to the west of Flemish Cap and one was reported east of 45° W., in that vicinity. Bergs continued to move into this area and at the end of April at least 16 had been reported east of 45° W., in the Flemish Cap area. May had 14 bergs reported east of 45° W., and the most easterly berg of the season was reported 19 May in 47°20′ N., 39°17′ W. By mid-June it was evident

[1] Ice Atlas of Northern Hemisphere, U. S. Navy Hydrographic Office Publication No. 550, first edition 1946.

that the ice threat in the Grand Banks area for the season of 1950 had virtually disappeared and the activities of the ice patrol were terminated for the season of 1950 on 26 June. The total number of bergs estimated south of the 48th parallel for 1950 was 460 as compared with a 50-year average of 433.

ICE CONDITIONS NORTH OF 50° N.

Any discussion of ice conditions north of 50° N. is restricted in scope because of the scarcity of reports. The movement of the ice and departures from average conditions will be discussed with reference to the Ice Atlas of the Northern Hemisphere.

The reports received in January for the Strait of Belle Isle area, indicated that pack ice was 60 miles seaward of the average limits and that Notre Dame Bay was covered with consolidated pack ice. March was practically devoid of reports; only one aircraft flight was made in this area and it reported numerous bergs within the pack ice. Pack ice was 40 to 60 miles seaward of the average limits. In April the limits were about average but as noted in the discussion of ice conditions for April the southern limits were further north than usual. The month of May was marked by a rapid disappearance of ice in the Notre Dame Bay area. The limits of pack ice were bounded by a line from 49°00′ N., to 52°00′ W., to 51°00′ N., 54°30′ W., on 6 May and by 30 May the limits were defined by a line from St. Barbe Island to 52°30′ N., 54°00′ W. Isolated patches of drift ice were reported in Notre Dame Bay on 6 June and thereafter no reports were received of drift ice in this area. The first report of a ship navigating the Strait of Belle Isle that was received by the ice patrol was that from the U. S. C. G. C. *Sorrel* which reported bergs in 51°47′ N., 55°51′ W., and 51°44′ N., 56°05′ W., on 9 June and that there was no drift ice in the Strait of Belle Isle. A final reconnaissance flight made in this area on 13 June sighted icebergs as far east as 49°00′ W., at 51°00′ N. With the disappearance of pack ice in the Belle Isle area reports were received of bergs entering the Strait of Belle Isle and reaching southernmost positions in the vicinity of 51°25′ N., 56°40′ W. Offshore, bergs were reported as far east as 49°00′ W., in latitude 51°35′ N., although the majority of bergs were west of 51° W. The offshore limit of bergs for July was defined by a line from 50°00′ N., 50°00′ W., to 53°00′ N., 52°00′ W., with the exception of bergs reported on the 19th in 52°30′ N., 49°30′ W. Numerous bergs were reported along the coast of Labrador and in the Strait of Belle Isle in June and July but in August no reports were received of ice in the Strait of Belle Isle. Bergs offshore were moving to the eastward and reached extreme easterly positions in the vicinity of 51°00′ N., 48°00′ W., on 31 August. On 3 September a berg was reported in 51°35′ N., 46°37′ W., and it was thought that this berg was one of those sighted 31 August in 51°00′ N., 48°00′ W. Subsequent reports were too few in number to confirm this movement

of ice to the eastward and practically none were received in October, November, and December.

February was notable for the number of bergs reported within a 200-mile radius of 55°00′ N., 40°00′ W., and especially for the report of 22 bergs and numerous growlers between 58°17′ N., 38°08′ W., and 57°08′ N., 39°28′ W., on 6 February. The presence of bergs in this area has not been unknown and although the amount of data available is not sufficient to allow any comparisons with average conditions, the fact that these reports were received argues that mariners traversing the area felt that these conditions were abnormal. Average pressure distributions for the months of January and February 1950 indicated winds in the area from the west and northwest. Also, the postseason oceanographic investigations in 1949 showed that the Irminger Current was not present in the vicinity of Cape Farewell. The combination of westerly winds with this current condition would tend to carry bergs traveling in the East Greenland Current to positions unusually far south of Cape Farewell.

In a given year, storis normally arrives off Cape Farewell in January and then spreads slowly westward. The month of May is usually the month when storis is present on the southwest coast of Greenland in the greatest amounts. One report on 4 April reported storis on the southwest coast. The storis extended along the coast from Cape Farewell to Arsuk Fjord with a maximum width of 90 miles. Between the storis and the coast there was a clear channel 3 to 5 miles in width. On the 1st of June storis was reported in 60°14′ N., 50°28′ W., and lacking any reports to the contrary it is presumed that this was the maximum seaward extension of storis in the area for 1950. The U. S. C. G. C. *Evergreen* reached the vicinity of Cape Farewell 5 August on the post-season oceanographic cruise but encountered no storis.

West ice usually approaches the west coast of Greenland in about latitude 66° N., during the winter. Rarely has it been reported south of this latitude. However, on 10 February the U. S. S. *Redbud* observed west ice from 63°10′ N., to 63°30′ N., along the meridian 52°20′ W. Danish authorities at Godthaab had no knowledge of west ice ever reaching this latitude. Single reports do not form a solid basis for any conclusions but the unusual current conditions coupled with the average westerly and northwesterly winds for January and February previously mentioned as carrying bergs southeast of Cape Farewell into steamer lanes were possibly responsible for west ice appearing as far south as 63°10′ N.

COMMUNICATIONS

Collection and dissemination of ice information, as previously mentioned, are vital functions of ice patrol work and the effectiveness of these two functions is dependent upon the effectiveness of radio

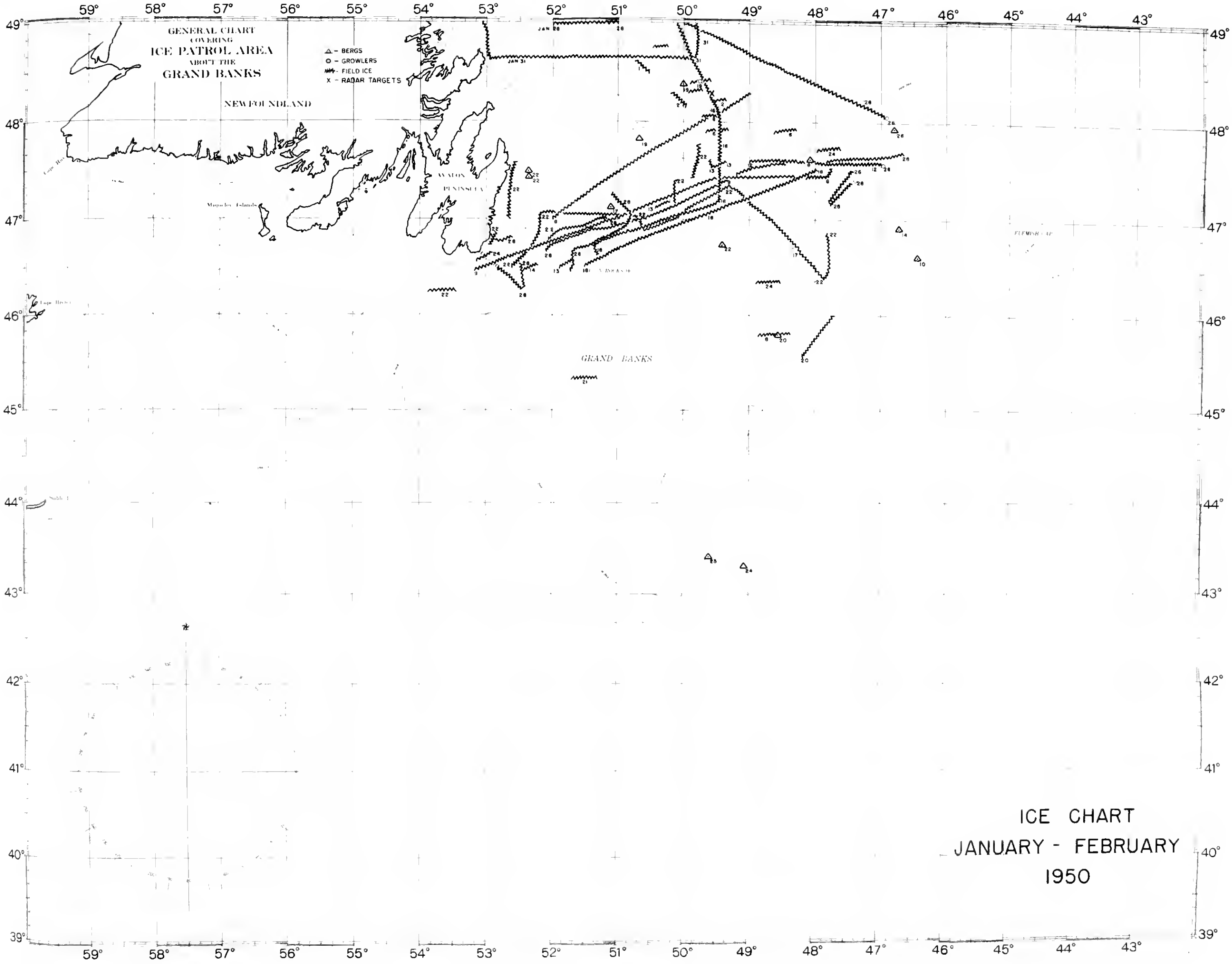

FIGURE 2—Ice conditions, January-February 1950. Figures indicate day of month ice was sighted or reported

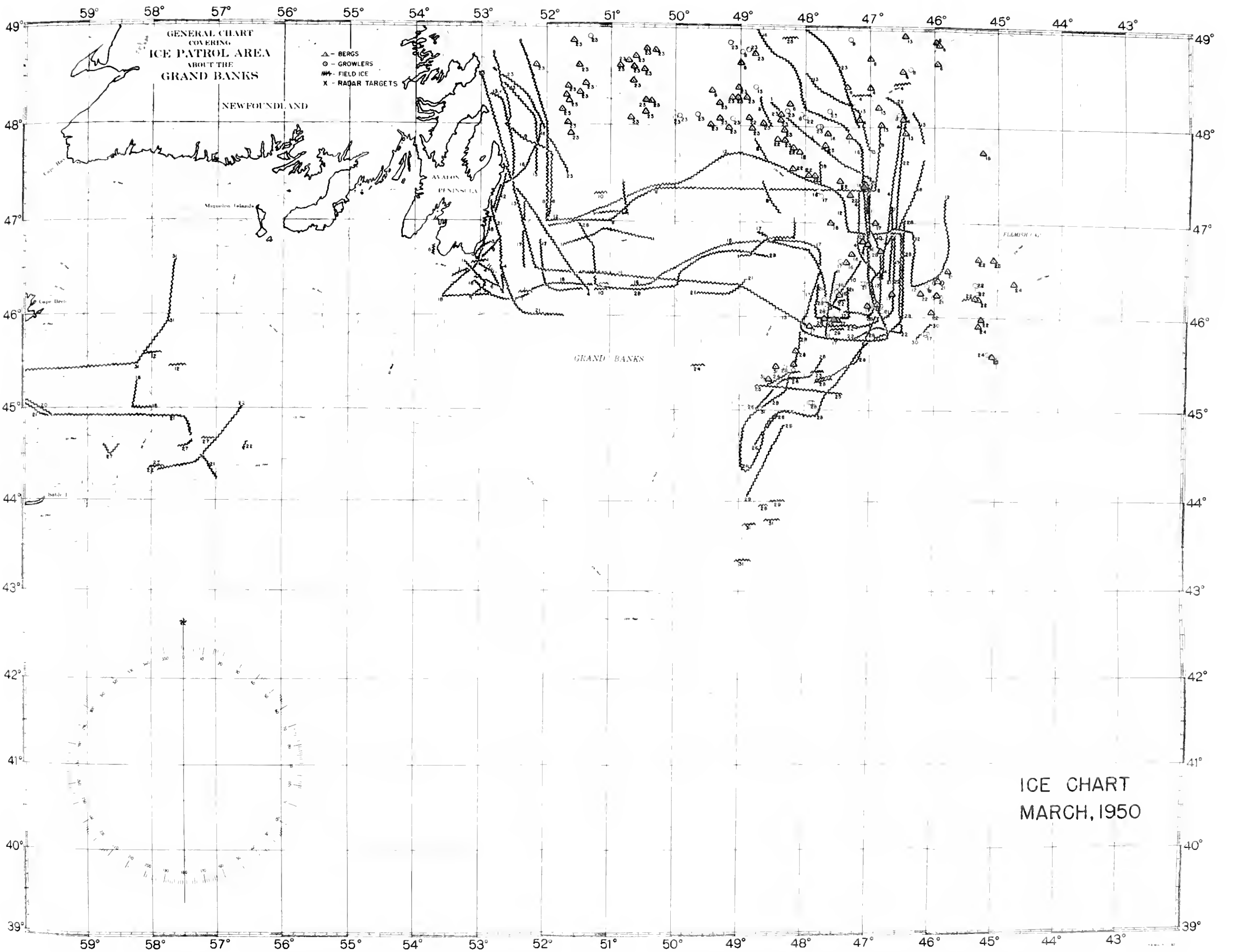

FIGURE 3—Ice conditions, March 1950. Figures indicate day of month ice was sighted or reported.

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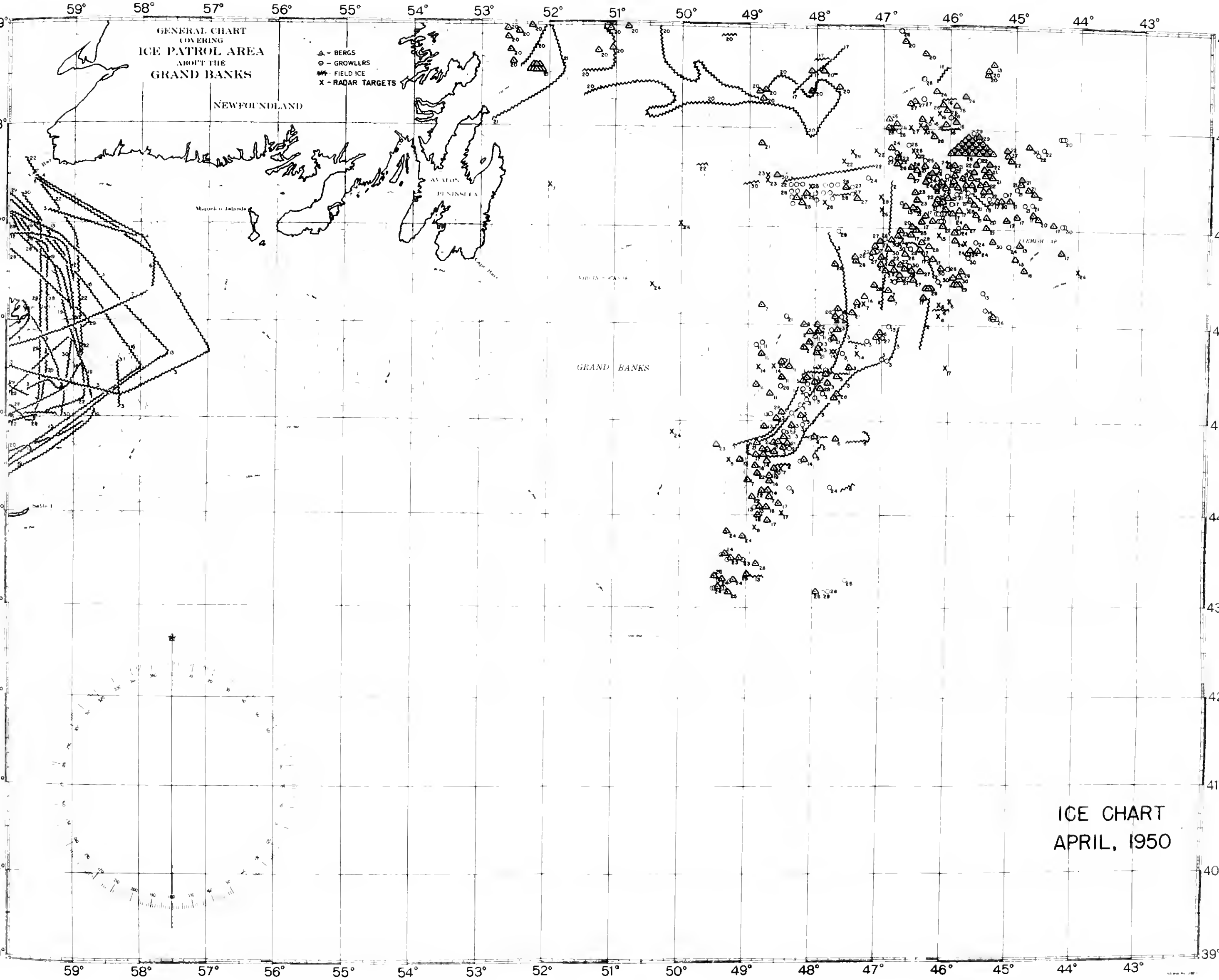

FIGURE 4. Ice conditions, April 1950. Figures indicate day of month ice was sighted or reported.

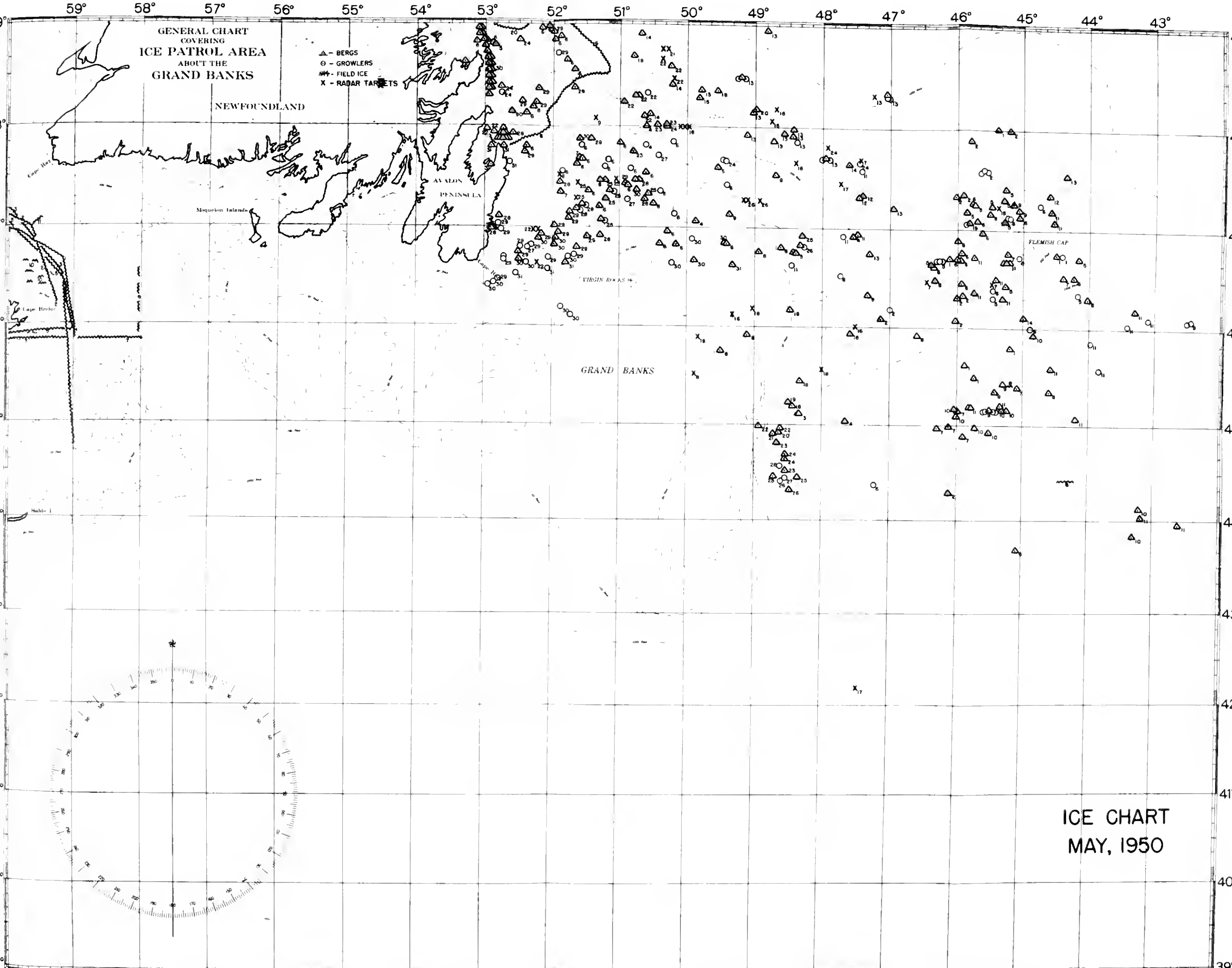

FIGURE 5—Ice conditions, May 1950. Figures indicate day of month ice was sighted or reported

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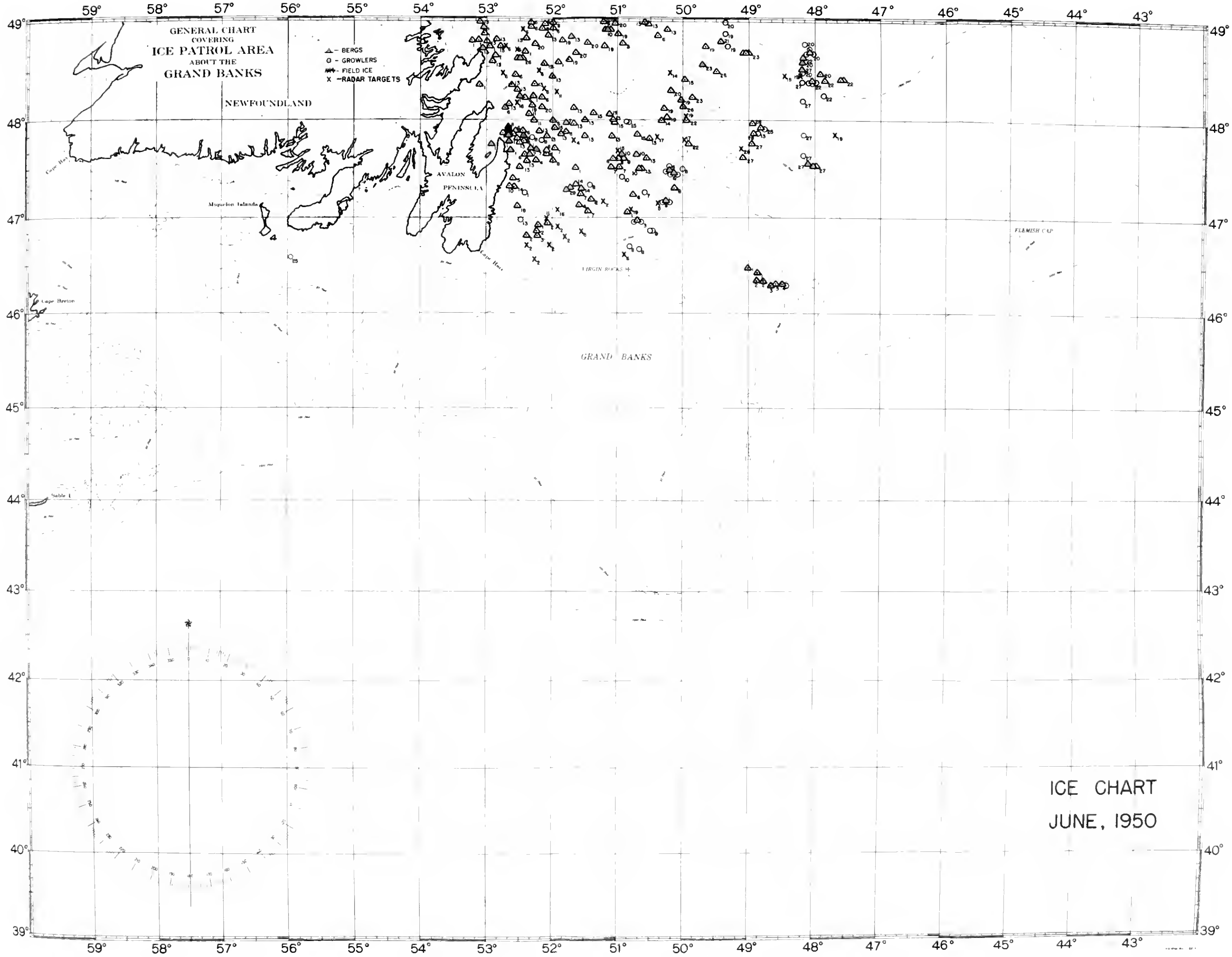

FIGURE 6—Ice conditions, June 1950. Figures indicate day of month ice was sighted or reported.

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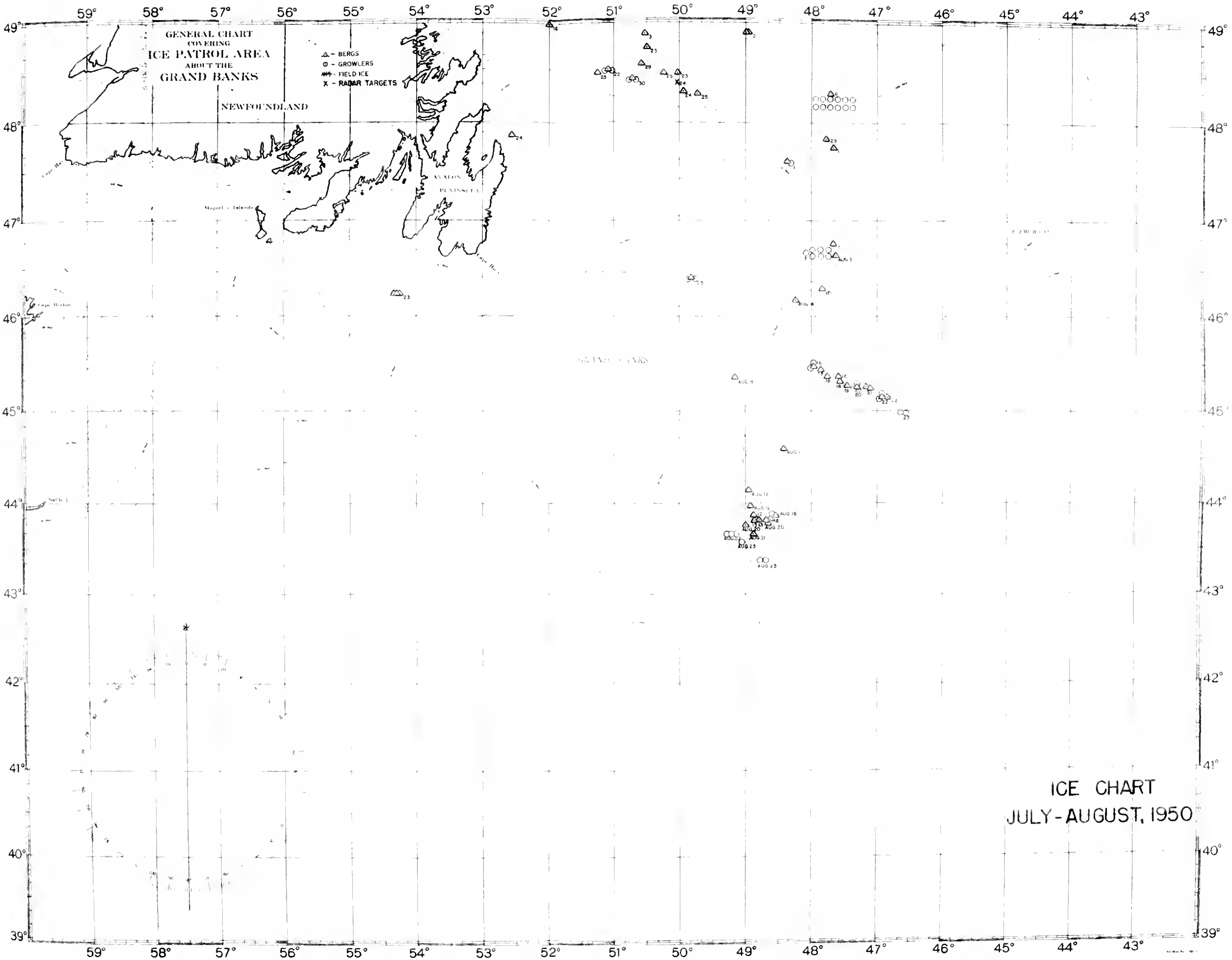

FIGURE 7. Ice conditions, July-August 1950. Figures indicate day of month ice was sighted or reported.

communications. With the increasing use of radio communications by maritime interests there has been a crowding of commercial frequencies which has interfered somewhat with the reception of ice patrol bulletins in the Grand Banks area. Studies are being conducted with the experience of the 1950 season in mind so that future broadcasts will be heard by a maximum number of ships with a minimum amount of interference because of crowded frequencies and conflicting schedules.

Scheduled broadcasts of the NIK ice bulletins were sent out twice daily during the 1950 season at 0118 and 1318 G. C. T. These times had been selected so that a maximum amount of recently received information could be included. The morning broadcast included a digest of ice reports received during the night while the evening broadcast included the ice sighted by the aircraft. The purpose of choosing the times 0118 and 1318 G. C. T. was to have the broadcast start immediately after a silent period and thus reduce the number of interruptions which would be occasioned by silent periods, and also to allow the broadcasts to be completed during the hours when the operators in single-operator ships would be on watch.

In 1950, the A2 emission on 480 kilocycles and the A1 emission on 8,425 kilocycles were keyed simultaneously. Each broadcast was preceded by a general call on 500 kilocycles after which the transmitting station (Coast Guard Radio, Argentia) announced the NIK ice bulletin with the operating signal to shift to 480 and 8425 kilocycles. Following the shift there was a 30-second period of test signals to permit receiver tuning. The ice bulletin was then broadcast twice, the first transmission being made at 15 words per minute and the second transmission at 25 words per minute, with a 2-minute interval between transmissions. The following daily schedule of ice broadcasts was maintained from 1318 G. C. T. on 6 March until 1318 G. C. T. 26 June.

Time (G. C. T.)	*Frequency (kilocycles)*	*Emission*
0118	480	A2
0118	8425	A1
1318	480	A2
1318	8425	A1

Constructive criticisms and comments from personnel of ships operating in the area have been a great help in the past and further suggestions are always welcome. Suggestions should be addressed to the Commandant, United States Coast Guard, Washington 25, D. C. It is reiterated that the successful functioning of an ice patrol depends upon the wholehearted cooperation of all ship traversing the area and thanks are expressed to those whose participation made this international service possible.

CRUISE SUMMARIES

First Ice Patrol Cruise "Acushnet," 24 March to 19 April 1950

On 24 March at 1330 G. c. t. the *Acushnet* departed Argentia to search for the berg reported in 45°58′ N., 45°15′ W., 23 March. This position was reached at 0200 G. c. t. 27 March at which time the *Acushnet* inaugurated the continuous surface patrol for the season of 1950. That day the ship hove to and rode out a gale which subsided sufficiently by the morning of the 28th to allow the vessel to search for icebergs and drift ice. Drift ice was sighted at 1230 G. c. t. in the vicinity of 46°00′ N., 47°00′ W. This ice consisted of widely scattered floes. At 0600 G. c. t. 30 March the French vessel *Lieutenant Rene Guillon* reported that she was fast in pack ice in 45°50′ N., 46°10′ W. However, she reported that she was in no danger and on 31 March she was able to make progress through the ice.

Visibility had improved by 1 April and a large berg was sighted in 45°00′ N., 48°30′ W., in close pack ice. Since the pack ice had a noticeable drift to the south, a safety message was broadcast to shipping that ice could be expected north of 44° N. The steamship *Loradore* entered the pack ice in 46°51′ N., 46°38′ W., on 2 April and reported a floating wreck in that position. Search planes were sent out but poor visibility hampered their efforts as well as those of the *Acushnet*. It was finally concluded that only discolored ice had been sighted so the search was abandoned. Aircraft attempted to search the area on the 3d but the results were negative because of fog.

Between the 3d and the 10th there was fog in the area except for a brief period on 6 April when pack ice was observed to have moved westward approximately 12 miles. At 0124 G. c. t. 11 April the *Acushnet* was ordered to proceed to the assistance of the steamship *American Producer* in 43°55′ N., 41°22′ W., who had reported a fire in No. 3 hold. Word was received at 0910 G. c. t. that the steamship *American Producer* had the fire under control and needed no further help. The *Acushnet* then returned to its primary duty of ice patrol vessel. A search of the area north of 43°50′ N., between 48° W., and 49° W., was made on the 12th. A badly eroded berg with three hummocks was sighted in 44°27′ N., 48°52′ W. The following day, 13 April, bergs were sighted in 44°56′ N., 48°45′ W.; 45°02′ N., 48°33′ W.; 45°46′ N., 47°56′ W., and growlers in 45°04′ N., 48°39′ W.; 45°57′ N., 47°45′ W.; 45°59′ N., 46°53′ W. On the 14th, two bergs were sighted in 44°14′ N., 48°41′ W., and 43°57′ N., 48°41′ W. Search operations on 15 April were held up by a dense fog and early on the 16th one berg which had been sighted on the 14th was resighted in 44°00′ N., 48°50′ W. A heavy south-southwest swell was running at the time and the berg was eroding rapidly. Late that day a course was laid westward to the Grand Banks to scout for any bergs which might have passed south in the fog unde-

tected. Fog persisted throughout the 17th and 18th. At 0400 G. c. t. on the 18th the *Acushnet* was relieved by the *Tampa* and course was set for Argentia which port was reached 19 April.

Fog was encountered every day of the cruise except on 27 and 28 March and on 2, 3, 5, 12, and 16 April. The highest winds encountered were force 10 from the south on 27 March. These winds lasted approximately 7 hours and then rapidly moderated. Meteorological observations and reports were restricted to six hourly synoptic weather reports.

Following is summary of water temperature, ice, and obstruction reports received during this cruise:

Number of ice reports received	36
Number of vessels furnishing ice reports	24
Number of water temperature reports received	525
Number of vessels furnishing water temperature reports	86
Number of vessels furnished special information	32

The 12 ice observation flights made during this cruise are discussed in the description of ice conditions for March and April.

Second Ice Patrol Cruise, "Tampa," 16 April to 5 May 1950

On Sunday, 16 April the *Tampa* departed Argentia and proceeded to relieve the *Acushnet* in the vicinity 43°50′ N., 49°00′ W., early on the morning of the 18th. After effecting relief, the *Tampa* started scouting the area for icebergs previously reported. On 19 April a berg was sighted in 44°24′ N., 48°40′ W., and two growlers in 44°02′ N., 48°42′ W. The search was continued along the southeastern edge of the Grand Banks through the 19th and 20th and on the 21st bergs were sighted in 44°30′ N., 48°34′ W.; 44°41′ N., 48°42′ W.; 44°45′ N., 48°24′ W.; 44°46′ N., 48°32′ W., and a growler in 44°43′ N., 48°21′ W. Visibility was excellent on the 22d and bergs were sighted this date in 44°12′ N., 48°55′ W.; 44°15′ N., 48°47′ W. The *Tampa* continued drifting with the latter two bergs until they reached position 43°13′ N., 49°16′ W. At this time the bergs were reduced in size and disintegrating rapidly. Upon receipt of orders from Commander, International Ice Patrol on 25 April, the *Tampa* departed these bergs to search for the boundaries of the cold wall between latitudes 41°40′ N., and 43°00′ N., between longitudes 48°00′ W., and 50°00′ W. The 50° isotherm which approximated the cold wall was located in the following positions: 41°40′ N., 48°35′ W.; 42°15′ N., 48°20′ W.; 42°25′ N., 47°50′ W.

A westerly gale was experienced the afternoon and night of the 27th which prevented any effective scouting. On the 28th the area between 42°00′ N., and 43°00′ N., and 49°00′ W., and 50°00′ W., was searched but no ice was sighted. An ice patrol plane sighted a berg in 43°10′ N., 47°57′ W., with several growlers in the vicinity

on the 28th so the *Tampa* set course to relocate this berg. Late on the 29th a dense fog enshrouded the area practically nullifying any search efforts. Visibility improved on the 30th so that the search could once more be resumed and a ladder search was continued on through 1 May when it was secured that afternoon with negative results. The *Tampa* then returned to the eastern edge of the Grand Banks to search the area between 43°40′ N., and 44°30′ N., between 48°15′ W., and 49°10′ W. Fog set in once more, effectively curtailing search efforts and persisted through 3 May. Radio relief by the *Acushnet* was effected on the 3d and the *Tampa* immediately set course for Argentia arriving there 5 May.

Weather for this cruise was marked by a lack of fog. During the 20 days at sea fog was present for 21 percent of the time. Winds of gale force were experienced on 25 and 27 March but aside from these 2 days very little rough weather was encountered. Meteorological observations and reports were restricted to six-hourly synoptic weather reports.

Following is a summary of water temperature, ice and obstruction reports received on this cruise:

Number of ice reports received	282
Number of vessels furnishing ice reports	36
Number of water temperature reports received	227
Number of vessels furnishing water temperature reports	70
Number of vessels furnished special information	25

A discussion of the 12 ice-observation flights made during this cruise is contained in the description of ice conditions for April and May.

Third Ice Patrol Cruise, "Acushnet" 2 May to 20 May 1950

The *Acushnet* departed Argentia in the evening of 2 May and proceeded to relieve the *Tampa* on 4 May in vicinity of 44°00′ N., 50°47′ W. After assuming the duties of the ice patrol vessel, a search was begun starting in latitude 43°00′ N., and progressing northward along the 49th meridian on the eastern edge of the Banks. Weather conditions from 4 May to 7 May were excellent for visual scouting and enabled the area between 42°30′ N., and 45°30′ N., to be thoroughly searched visually. The only ice sighted within this area was a growler in 44°23′ N., 47°11′ W., on 6 May. Many ships reported numerous bergs in the Flemish Cap area at this time as well as large bergs and growlers to the northeastward of the Grand Banks in the vicinity of 47° N. Fog minimized search efforts on 8 May, and it was not until 9 May that visibility improved sufficiently to allow the search to be continued northward in the Labrador Current on the edge of the Grand Banks. The fishing schooner *Greenock* of Lunenberg, Nova Scotia, was contacted in 46°00′ N., 49°06′ W., on 10 May. No ice had been seen by her in that vicinity. The schooner *Freda M* of St. Johns, Newfoundland, was hailed nearby and reported all well.

The search was continued until 11 May when a small berg was sighted in 46°57′ N., 47°28′ W. A course was then set for the Flemish Cap area to investigate numerous reports of bergs in that area.

A small berg about 50 feet high and growler were sighted in 46°56′ N., 47°29′ W., on 11 May. After the vicinity of Flemish Cap was reached, a search was made along the 100-fathom curve but no ice was sighted. The *Acushnet* then headed westward to search the area north of the Grand Banks. That night a radar target was identified at a distance of 1 mile by use of searchlight in 46°45′ N., 47°19′ W., as the berg sighted 11 May in 46°56′ N., 47°29′ W., having drifted 140° T at approximately 11 miles per day. Bergs were sighted 13 May in 47°42′ N., 47°58′ W., and 47°56′ N., 48°35′ W. Visibility continued good throughout 14 May as the ship proceeded south to the Grand Banks. After rendezvousing with the *Evergreen* to obtain the current chart on 15 May in vicinity of 45°00′ N., 48°30′ W., course was set northeastward to search for the berg previously reported 12 May. This berg was relocated 16 May in 45°56′ N., 47°35′ W. On 17 May an attempt was made to locate a charted 7-fathom shoal in 45°42′ N., 48°16′ W., but no sounding less than 90 fathoms was obtained after crossing the position three times. The *Acushnet* relocated the berg sighted on the 12th on 18 May in 45°27′ N., 48°20′ W., and drifted with this berg until the 19th. The *Acushnet* was relieved by the *Tampa* 19 May, and course was set for Argentia where the *Acushnet* arrived 20 May.

Weather for this cruise compared favorably with the data for average conditions as published on the Pilot Chart of the North Atlantic Ocean H. O. No. 1400 for the month of May 1950. The percentage of fog was 32 percent as compared with the average of 30 percent for this time of year. No gales were experienced this cruise, and sea conditions were generally good, ranging from calm to moderate. Meteorological observations were confined to six hourly synoptic weather reports.

Following is a summary of water temperature and ice reports received on this cruise:

Number of ice reports received	73
Number of vessels furnishing ice reports	51
Number of water temperature reports received	515
Number of vessels furnishing water temperature reports	81
Number of vessels furnished special information	43

The eight ice-observation flights made during this cruise are discussed in the description of ice conditions for May.

Fourth Ice-Patrol Cruise, "Tampa," 18 May to 5 June 1950

The *Tampa* left Argentia 18 May and proceeded to the vicinity of the Tail of the Grand Banks and relieved the *Acushnet* on 19 May. After relieving the *Acushnet*, the *Tampa* scouted the eastern edge of the Grand Banks between latitudes 44° N., and 45° N. The berg

which the *Acushnet* had left on the 19th was relocated on the 20th in 45°58′ N., 48°39′ W. This berg was tracked until the 23d when the visibility had improved to such an extent that a search was made along the eastern edge of the Banks to 45°13′ N., 48°29′ W., and back to the berg again in position 44°42′ N., 48°32′ W. By the 26th this berg had been reduced to the size of a growler in 44°25′ N., 48°36′ W. An attempt was made on the 27th to make a search to the northward but the fog became so dense that the vessel was forced to return to the vicinity of the growler. By the afternoon of the 28th the growler had been reduced to such a small size that it was difficult to keep track of it in the rising gale. It was estimated that it would not last 24 hours so the *Tampa* left it and steamed slowly southwestward to ride out the gale.

Weather conditions improved on the 29th and the seas moderated sufficiently to allow a ladder search to be commenced northward along the 100-fathom curve on the eastern edge of the Grand Banks until nightfall when the ship was stopped and drifted in the vicinity of 44°45′ N., 48°30′ W. During the 30th a search was made for the berg reported 26 May in 46°50′ N., 48°20′ W. After searching the area between latitudes 45°35′ N., to 46°55′ N., and between longitudes 48°25′ W., and 47°30′ W., with negative results the *Tampa* stopped and drifted for the night. The 31st of May and the 1st of June were spent in trying to locate the berg sighted by an ice patrol plane 30 May in 46°38′ N., 49°20′ W. The berg was located the afternoon of the 1st in 46°26′ N., 48°52′ W. For the rest of day and all of 2 June the *Tampa* drifted with this berg which continually calved growlers and smaller bits of ice. Early on 3 June the *Tampa* set a course to the westward to meet the *Acushnet* who relieved her that same morning. The *Tampa* then returned to Argentia arriving there on 5 June.

Only one gale occurred on this cruise and that was the one experienced 28 May. Fog was present 49 percent of the time which is greater than the average as shown on the Pilot Chart of the North Atlantic for May 1950. Weather observations and reports were confined to six hourly synoptic weather reports.

Following is a summary of water temperature and ice reports received on this cruise:

Number of ice reports received	392
Number of vessels furnishing ice reports	86
Number of water temperature reports received	371
Number of vessels furnishing water temperature reports	86
Number of vessels furnished special information	30

A discussion of the 12 ice observation flights made during this cruise is contained in the description of ice conditions for May and June.

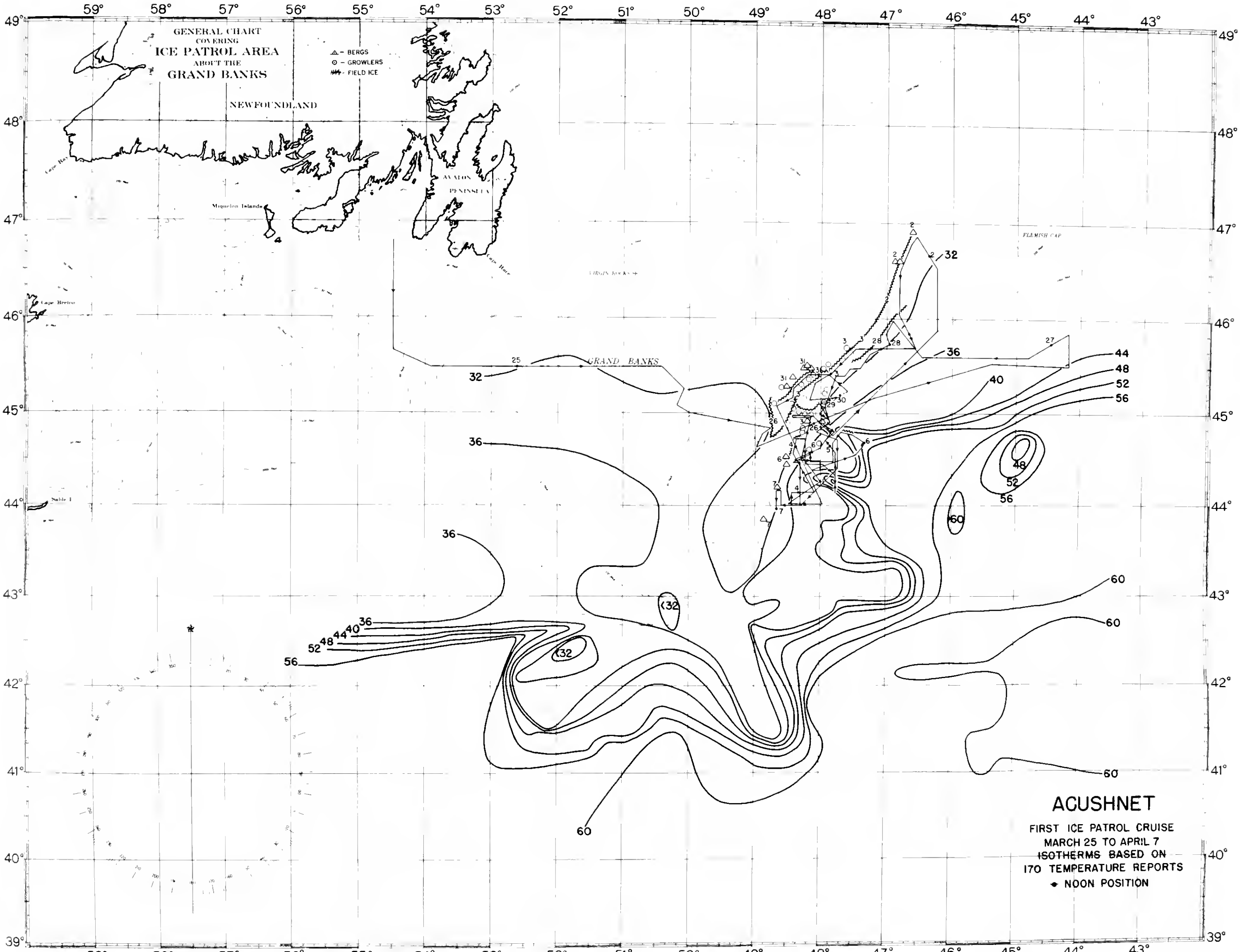

FIGURE 8—First cruise, ice patrol, *Acushnet*, 24 March–7 April 1950, showing surface isotherms.

955984 O - 51 (Face p. 20) No. 1

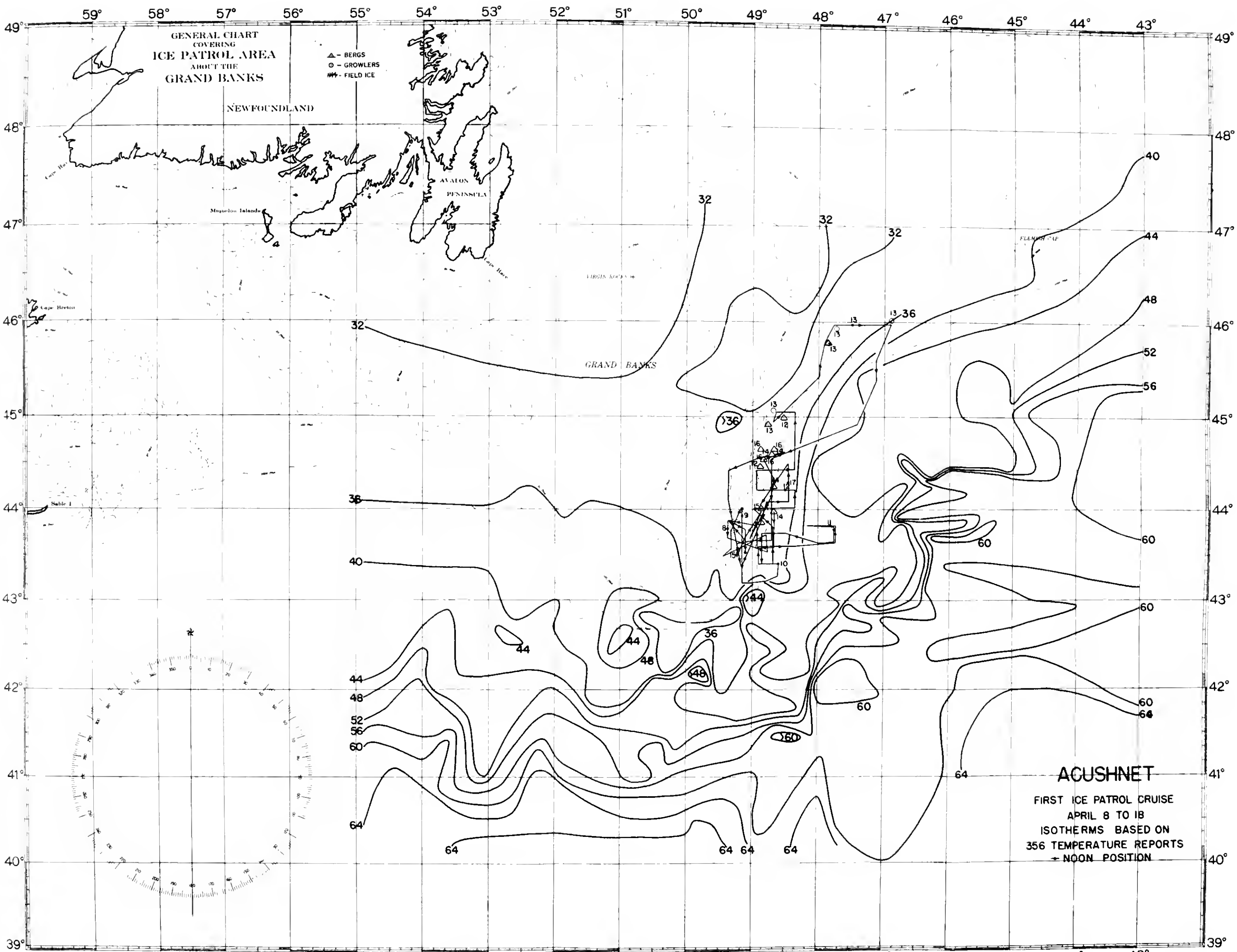

FIGURE 9—First cruise, ice patrol, *Acushnet*, 8–19 April 1950, showing surface isotherms.

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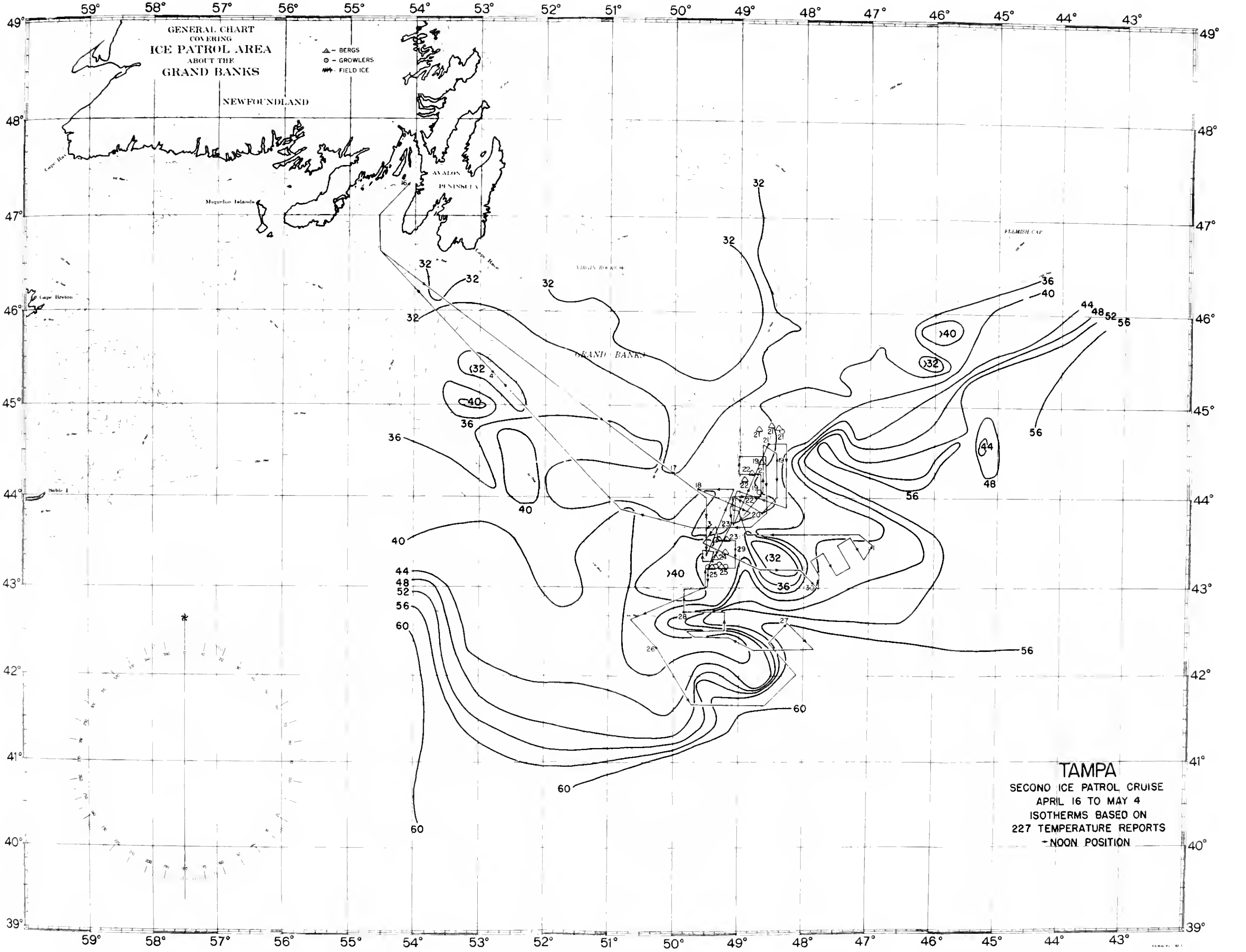

FIGURE 10—Second cruise, ice patrol, *Tampa*, 16 April–5 May 1950, showing surface isotherms.

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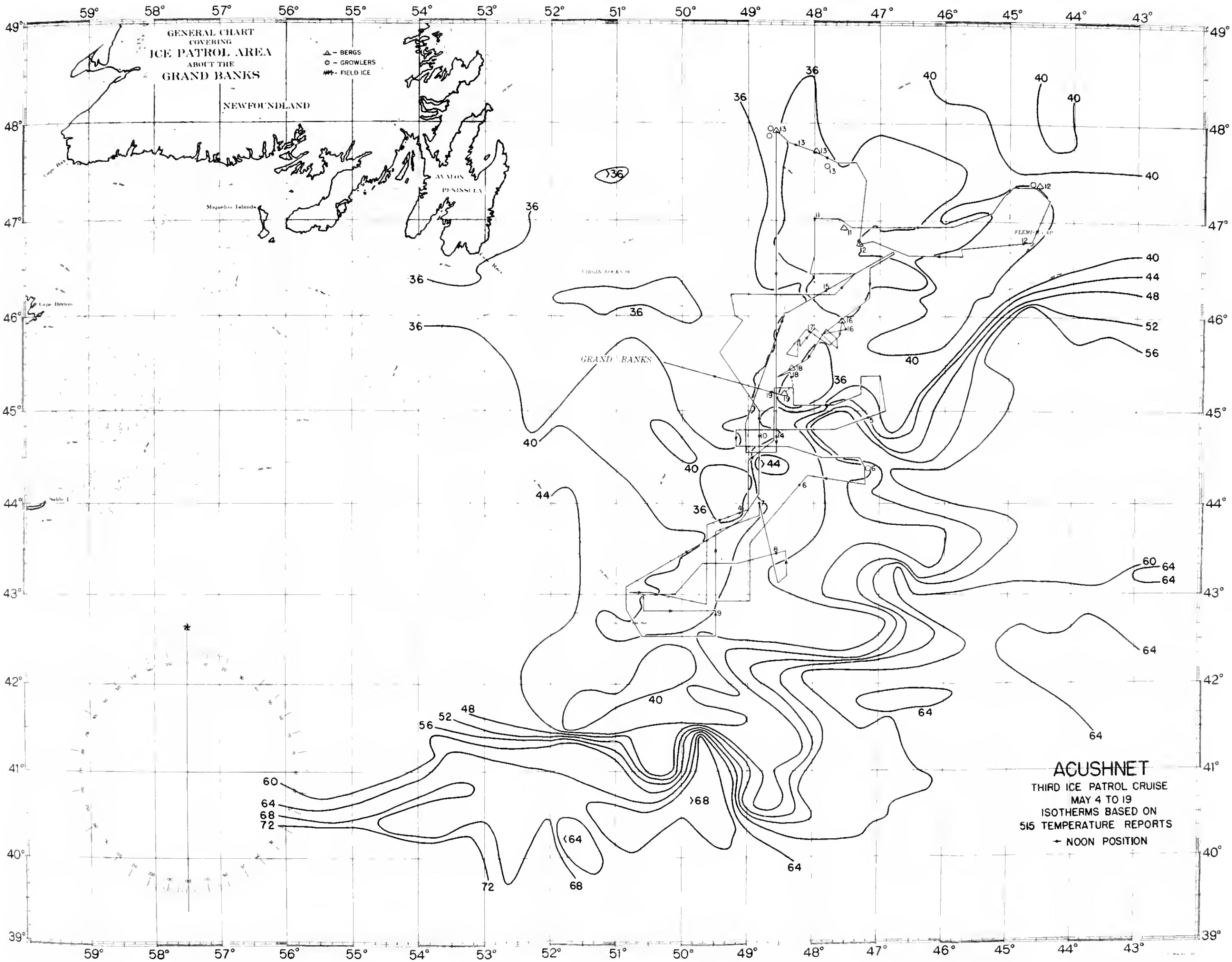

FIGURE 11—Third cruise, ice patrol, *Acushnet*, 2-20 May 1950, showing surface isotherms.

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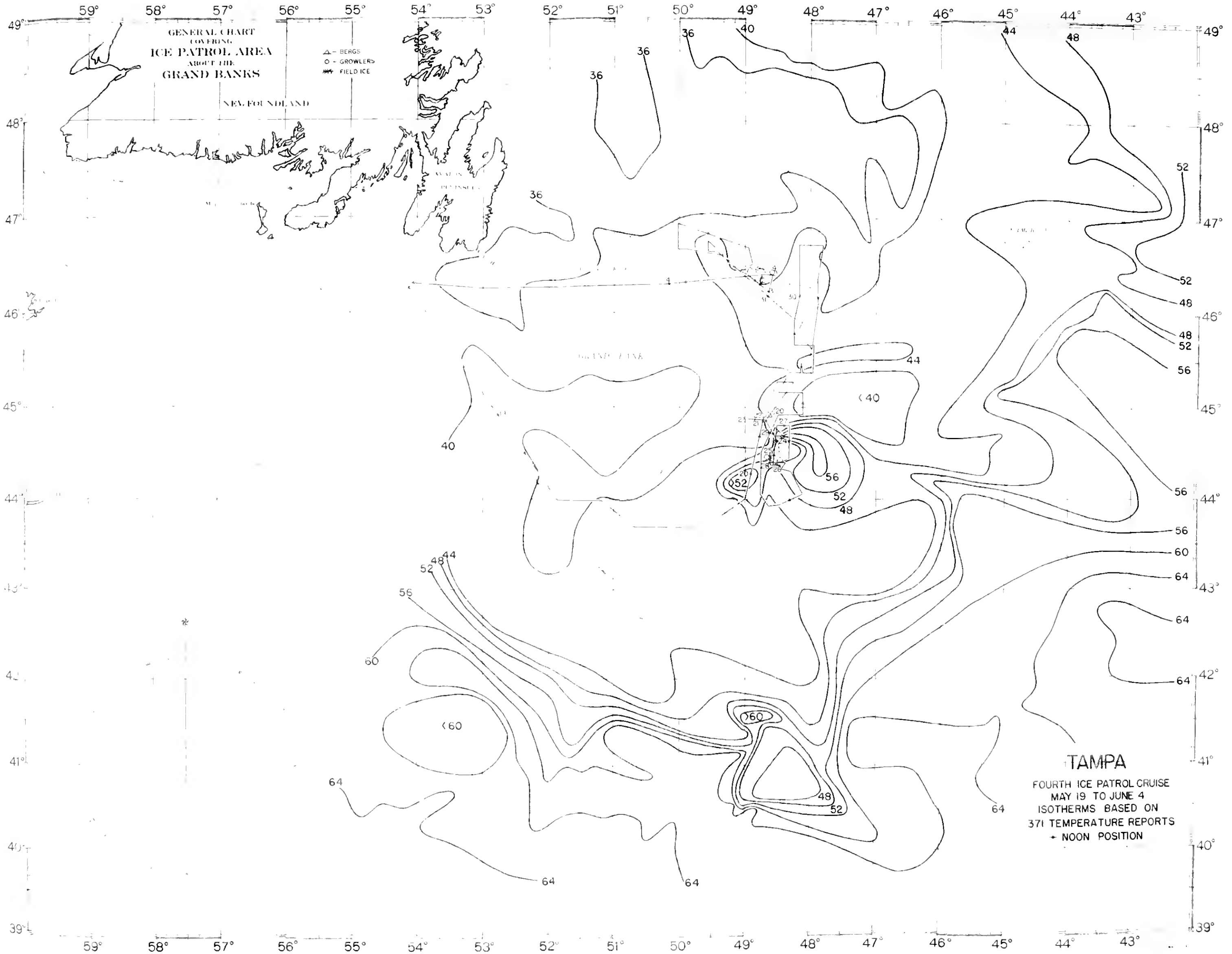

FIGURE 12. Fourth cruise, ice patrol. *Tampa*, 18 May–5 June 1950, showing surface isotherms

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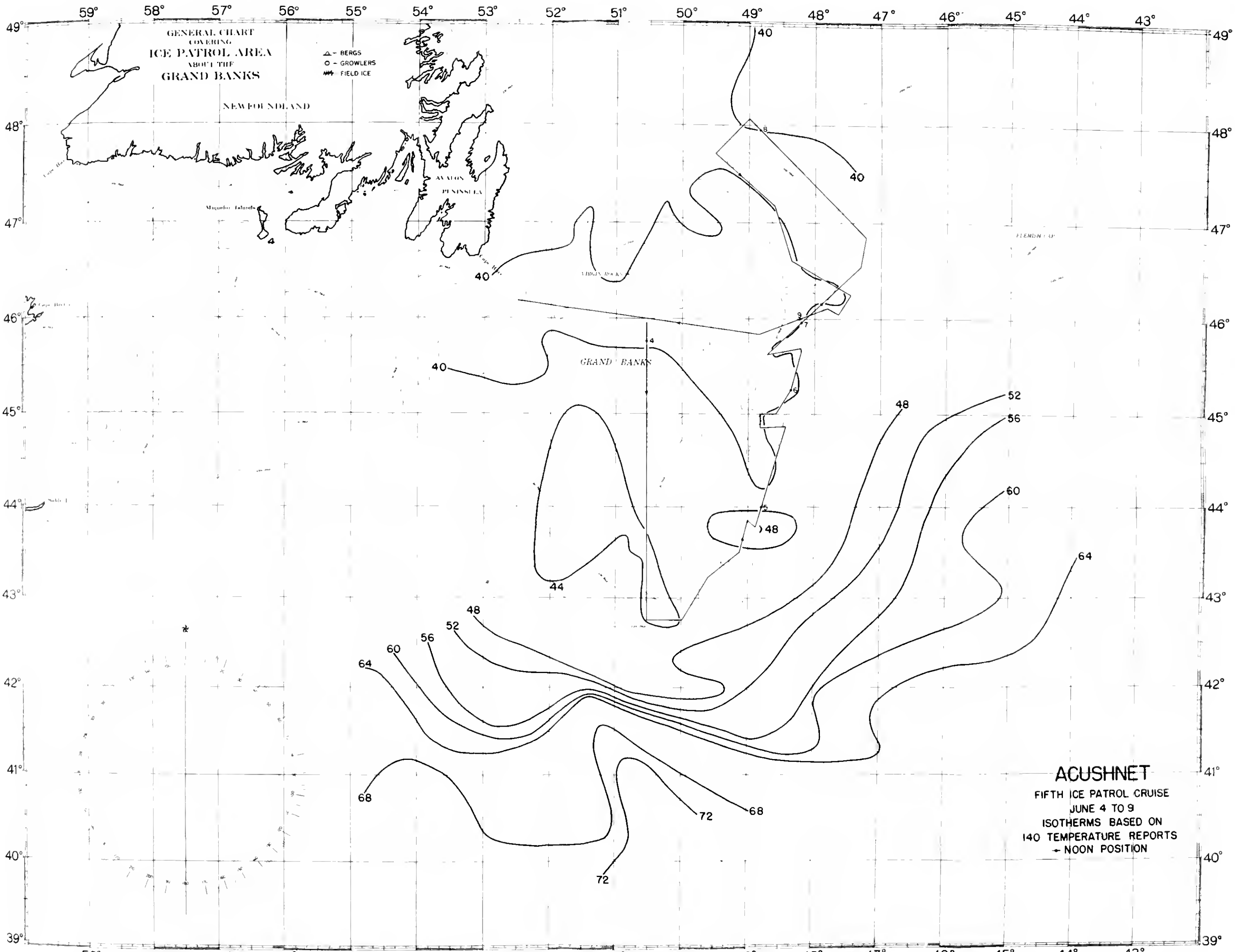

FIGURE 13—Fifth cruise, ice patrol, *Acushnet*, 3–10 June 1950, showing surface isotherms.

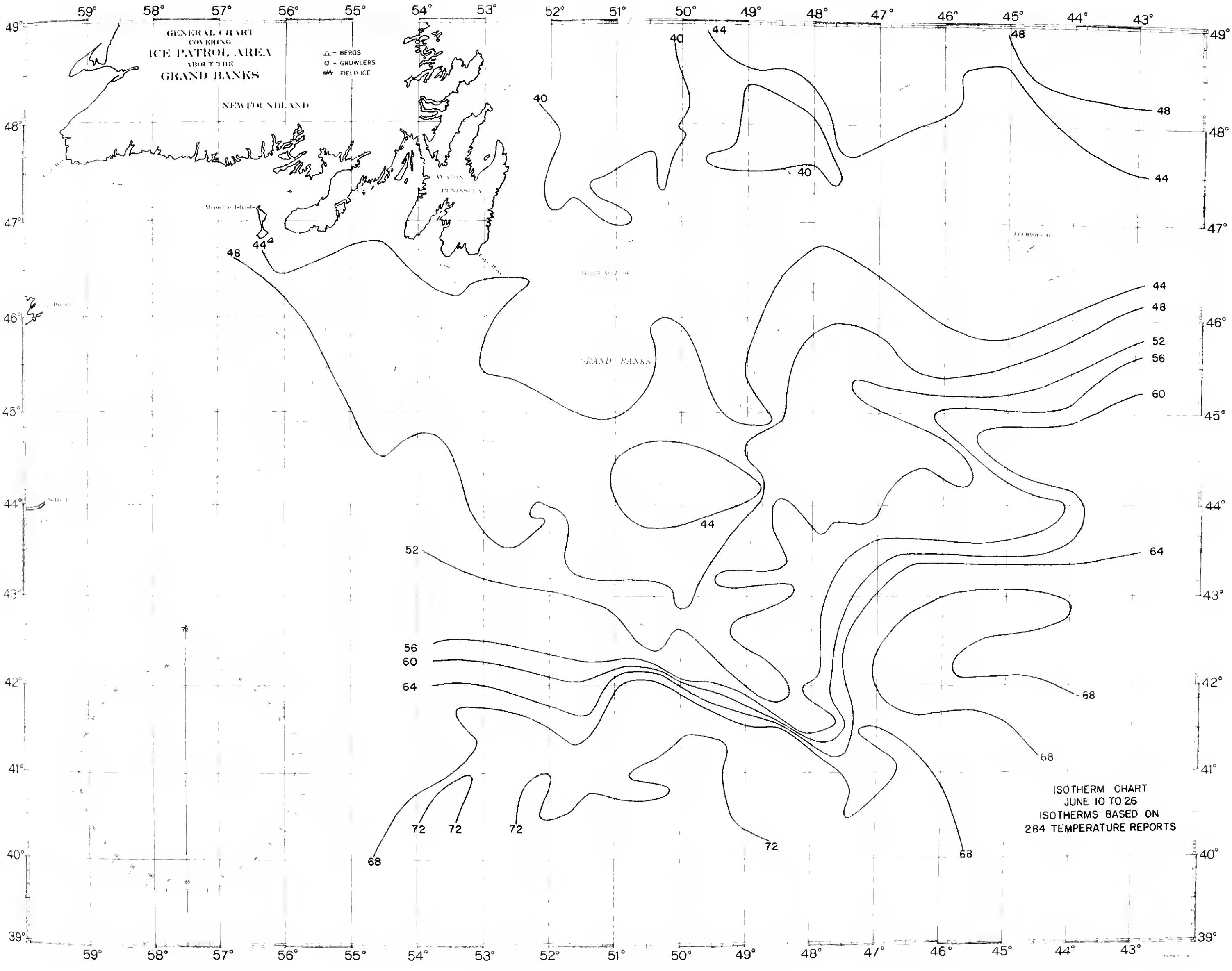

FIGURE 14—Surface isotherms for the period 10-26 June 1950

Fifth Ice Patrol Cruise, "Acushnet," 3 June to 10 June 1950

Departing Argentia the afternoon of 3 June, the *Acushnet* proceeded to the vicinity of 46°00′ N., 50°30′ W., and relieved the *Tampa* of the duties of ice-patrol vessel on 4 June. The *Acushnet* then headed for the Tail of the Grand Banks and was able to search the vicinity of 42°45′ N., 50°00′ W., in good visibility. No recent ice observations had been made on the eastern edge of the Grand Banks northward from this position, so the *Acushnet* set a course to the north and scouted both visually and by radar to 47°50′ N., 48°50′ W., which position was reached about noon on the 8th. The course was then changed to the southward to search the Grand Banks for bergs especially the berg sighted by the *Tampa* on 4 June in 46°19′ N., 48°30′ W. Ice patrol aircraft searched the areas to the south in good visibility on 8 June but sighted no ice east of 50° W., and south of 46°40′ N. A search of the area within 50 miles of the last reported position of the berg sighted by the *Tampa* on 4 June was completed on 9 June without sighting any ice. The surface vessel patrol was discontinued at 1200 G. c. t. 10 June 1950 and the *Acushnet* headed for Argentia arriving there the same date. The service of ice observation was continued until 26 June by aircraft.

For this short patrol, fog was present 43 percent of the time which is greater than the average of 30 percent shown on the Pilot Chart of the North Atlantic Ocean for June 1950. However, it was observed that visibility in fog was better on this cruise than on previous cruises. No gales or violent seas were experienced. Meteorological observations were restricted to six-hourly synoptic weather reports.

Following is a summary of ice and water temperature reports received on this cruise.

Number of ice reports received	10
Number of vessels furnishing ice reports	13
Number of water temperature reports received	140
Number of vessels furnishing water temperature reports	39
Number of vessels furnished special information	22

A discussion of the six ice observation flights made during this cruise is contained in the description of ice conditions for June.

DISCUSSION OF WIND EFFECTS

Analysis of wind effects on ice movements in the Grand Banks area was made in 1947 and 1949 using weather maps obtained from the aerology office at Argentia. (See bulletins 33 and 35 of this series.) This procedure was followed in a similar analysis for the 1950 season but because of certain gaps in the data, recourse was finally made to the monthly mean sea level charts published by the United States Weather Bureau.

Average pressure gradients were computed from the differences in pressure along the sides of a rectangle 600 miles long by 180 miles wide centered at 51°00′ N., 51′00′ W., for each month. These were com-

pared with the pressure gradients computed from data obtained from Normal Weather Maps Northern Hemisphere Sea Level Pressure published by the United States Weather Bureau. To correlate these gradients with ice movements, wind vectors were drawn 15° to the right of the geostropic wind to approximate the relations between ice drift, wind direction and coriolis' acceleration. After these vectors were drawn, departures from normal conditions were noted for the 1950 season. The average velocity of the winds in February was greater than the normal wind for this month. This increase in velocity was accompanied by an early movement of bergs to the Tail of the Grand Banks and a movement of pack ice in late February into the northern part of the Grand Banks area. The average wind for March had a greater velocity than normal. Drift ice in this month covered the northern half of the Grand Banks and reached its maximum southerly limits for the season. The greatest departure from normal conditions occurred in April when the average wind was south-southwesterly rather than northwesterly. This opposed the movement of drift ice southward and tended to force drift ice into warmer water north of the Grand Banks. By the end of April the Grand Banks area south of 48° N., was clear of drift ice. Usually drift ice reaches its maximum southerly limits in this month. Normal vectors and average vectors for the 1950 season are shown in figure 15.

Wind has a greater and more direct effect on drift ice than on bergs. In the latter case wind does not directly affect the movement of a berg until it has a relatively shallow draft. However, it indirectly affects the movement of bergs by creating a wind-driven current in water which becomes deeper and consequently more effective in transporting bergs the longer a wind blows from a certain direction. In February and March normal winds blow in a direction which aids the movement of drift ice to the southeast both by exerting a stress on the ice and also adding energy to the existing current system. The average vectors for February and March show velocities greater than the normal vectors. The net result of these greater velocities was an early movement of pack ice southward, and consequetnly early destruction of the 1950 crop of drift ice. This destruction was hastened by the average wind in April which blew against the current system and tended to force the drift ice into warmer water north of the Grand Banks. The average calm in May and the early disappearance of drift ice allowed many bergs which would otherwise have drifted to the eastern edge of the Grand Banks to enter Notre Dame Bay and ground along the Newfoundland Coast. Movement of bergs to the east of Flemish Cap in this month was the result of oceanographic conditions further south rather than the lack of an average wind. June was marked by an average wind that was greater than normal. This contributed to the movement of icebergs into the area in July after the ice season had been terminated.

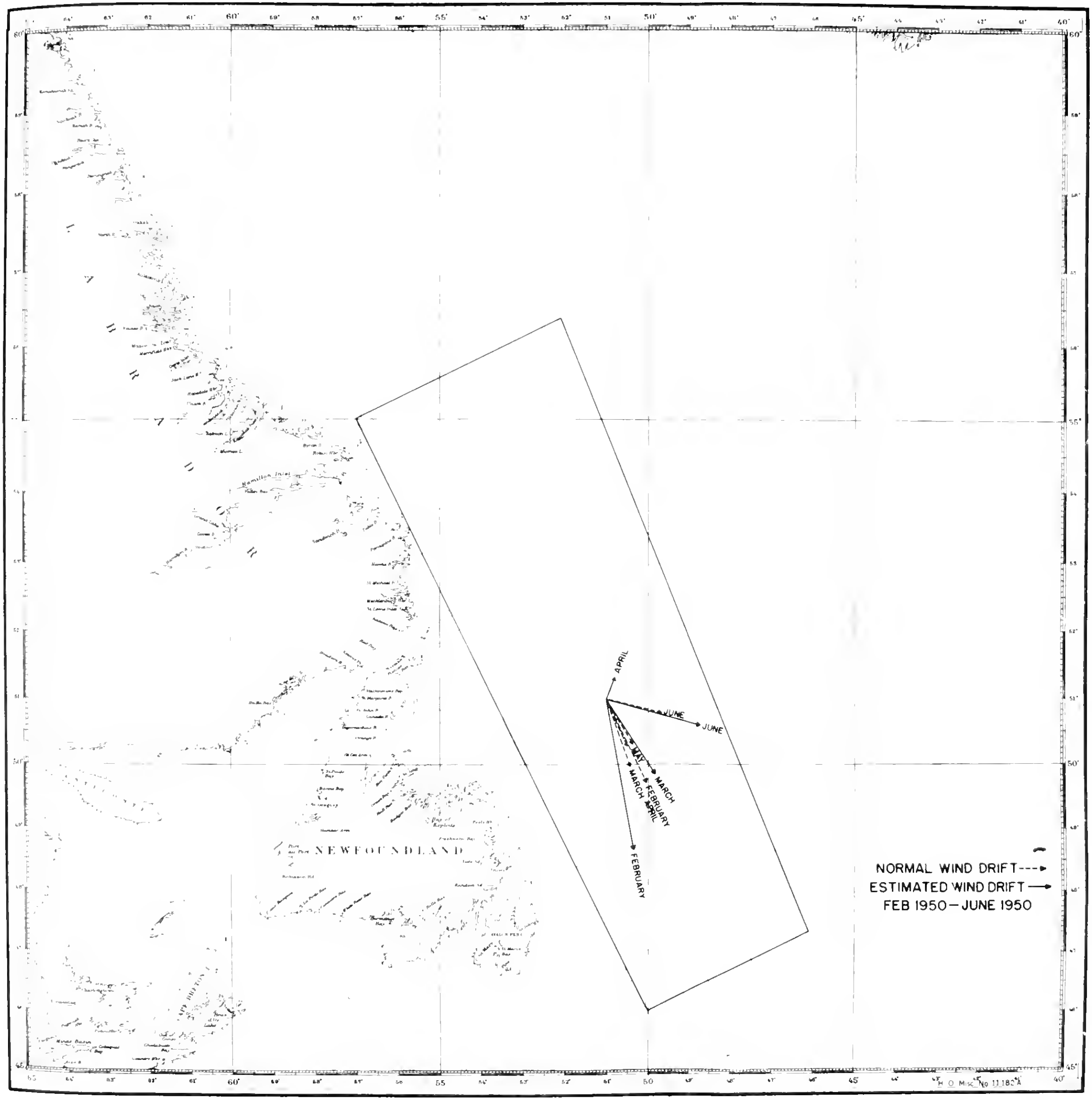

FIGURE 15.—Estimated wind drift of ice from monthly mean barometric pressure gradients in area indicated. February-June 1950.

955984 O - 51 (Face p. 22)

TABLE OF ICE AND OBSTRUCTION REPORTS, SOUTH OF 50° N., 1950

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
1	Jan. 21	USCG Air Detachment, Argentia, Newfoundland.	Fogo Island to 49 45	 53 30 thence south and 15 miles offshore to and including Bonavista Bay.	Drift ice.
2	Jan. 28	USCGC Chincoteague	49 00 to 53 00 to 53 00 to 49 00 to 49 00	51 00 51 00 52 00 52 00 51 00	Continuous field ice with very little open water.
3	Jan. 29	do	49 31	51 47	Field ice.
4	Jan. 31	USCG Air Detachment, Argentia, Newfoundland.	Cape Bonavista to 48 40 to 50 00	 49 50 49 50	Outer limits of field ice.
5	Feb. 1	USCGC Humboldt	48 35	50 40	Broken field ice in patches and streaks running NNW-SSE.
6	do	do	48 46	50 23	Field ice increasing in thickness and amount.
7	do	do	48 20	49 48	Limit of ice field.
8	Feb. 2	St. Stephen	48 14	50 05	Encountered streamers of field ice.
9	do	do		49 30	Extreme limit of field ice.
10	Feb. 6	Moraedale	47 54	49 30	Drift ice approximately 8 miles long, 2 miles wide in east-west direction.
11	do	Stockholm	48 18	49 35	Radar target probable berg in field ice.
12	Feb. 8	USCGC Matagorda	47 54	48 27	Entered field ice.
13	do	do	45 48	48 39	Field ice.
14	do	Mormacisle	48 04	49 36	Heavy pack and field ice in all directions.
15	do	Danaholm	47 38	48 04	Small berg and growler.
16	Feb. 9	Mormacisle	48 18 to 47 00	49 00 52 00	Continuous field and pack ice.
17	do	USCG Air Detachment, Argentia, Newfoundland.	46 28 to 47 26 to 47 26 thence northward	53 10 49 20 47 50	Outer limit of field ice.
18	Feb. 10	Beaverlake	46 37	46 25	Small berg.
19	Feb. 12	St. Stephen	47 37 to 47 35	49 00 48 00	Encountered field of heavy ice with streamers of loose brash ice extending as far as 47°00′ W.
20	Feb. 13	USCGC Bibb	47 36 to 47 33	49 22 49 33	Light broken ice in strings.
21	do	do	47 33	49 33	Heavy field ice northward.
22	do	do	46 33	51 48	Broken ice.
23	do	do	47 10	50 24	Heaviest concentrations broken field ice.
24	Feb. 14	do	46 30	52 22	Detached pattern of light strings.
25	do	Stockholm	46 55	46 43	Small berg (same as No. 15).
26	Feb. 16	USS Redbud	49 10 to 48 08	50 07 49 29	Drift ice, scattered floes and close pack.
27	do	do	47 11 to 46 44	49 30 51 22	Pack ice extending undetermined distance east-southeastward.
28	Feb. 17	Nova Scotia	46 42	48 20	Growler.
29	do	Asta	47 07	51 06	Berg.
30	Feb. 18	Cairndalance	47 30 to 46 30	48 00 51 30	Continuous pancake and sludge ice intersected by lakes of water.
31	Feb. 19	Selma Thorden	47 48	50 40	Berg.
32	do	do	48 23	50 00	Do.
33	do	do	48 25	49 45	Drift ice and growlers.
34	Feb. 20	Empress of Canada	45 35 to 46 00	48 12 47 44	Passed numerous belts of pancake ice.
35	do	Minnesota	45 47	48 34	Small berg.
36	Feb. 21	USCGC Castle Rock	45 11	60 11	Encountered light close packed field ice with some heavy pieces. Signs of ice to north and west with patches to south and east.
37	do	USCGC Dexter	45 20	51 30	Intermittent drift ice.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
38	Feb. 22	Ice Patrol Plane	46 30 to 46 50 to 46 56 to 47 20 to 46 23 to 46 52	52 37 52 00 50 28 49 20 47 52 47 50	Southern limits of drift ice, mostly brash and sludge.
39	---do	-----do	47 25 to 47 03 to 47 04	49 50 50 40 52 10	Southern limits close pack ice.
40	---do	-----do	46 45	49 25	Small berg.
41	---do	-----do	47 30	52 23	Do.
42	---do	-----do	47 27	52 23	Do.
43	---do	USCGC Castle Rock	46 15	53 40	Large area newly forming ice.
44	Feb. 23	Parthia	43 25	49 37	Berg.
45	Feb. 24	USCGC Castle Rock	46 22	48 45	Isolated patches and strings of brash ice.
46	---do	-----do	47 45	47 50	Do.
47	---do	American Clipper	43 14	49 04	Berg (same as No. 44).
48	---do	Cape Race Radio	Cape Race		Strings of slob ice in all directions.
49	---do	-----do	Cape Race		Scattered slob and loose ice to south and southwest.
50	Feb. 25	-----do	47 23 to 47 11	47 27 47 48	Scattered fields of drift ice.
51	Feb. 26	Mormacreed	47 32 to 47 11	47 27 47 48	Do.
52	---do	St. Stephen	47 58	46 48	Large berg.
53	---do	-----do	48 04	46 55	Growler.
54	Feb. 27	Cape Race Radio	Cape Race		Strings of slush ice in all directions.
55	Feb. 28	Ice Patrol Plane	47 06 to 46 50 to 46 45 to 46 40	50 48 50 50 52 03 52 05	Limits open pack ice.
56	---do	-----do	46 55 to 46 42 thence southwest	50 48 51 40	Limits drift ice mostly sludge and brash.
57	---do	-----do	Cape Race to 46 15 to 46 32	 52 30 52 30	Do.
58	---do	-----do	47 06 to 46 50 to 47 35 to 47 42	50 48 50 50 48 50 46 40	Limits open pack ice.
59	---do	-----do	47 25	47 23	Growler.
60	---do	-----do	47 35	46 58	Do.
61	Mar. 1	-----do	46 15	52 20	Drift ice.
62	---do	-----do	Cape Race to 46 35 to 46 20 thence southwest	 53 15 52 55	Limits of open pack, brash and sludge.
63	---do	-----do	47 05 to 47 05 thence northward and westward	51 15 50 45	Do.
64	---do	-----do	47 00 to 46 50 to 46 40 to 46 40	48 10 48 10 48 50 49 00	Drift ice, mostly brash and sludge.
65	---do	Cape Race Radio	46 34	53 05	Patch of slob ice.

TABLE OF ICE AND OBSTRUCTION REPORTS, SOUTH OF 50° N., 1950—Continued

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
66	Mar. 1	Cape Race Radio	7 miles south and west Cape Race and 10 or 12 miles to southeast and east.		Loose ice and slob.
67	do	USCGC Castle Rock	47 54	47 20	Berg.
68	do	do	48 15 to 47 28 to 46 42	48 32 to 46 58 to 47 07	Encountered field ice in scattered strings and patches with some heavy pieces.
69	do	do	46 49 to 46 49 to 46 55 to 46 48	50 22 to 50 24 to 51 07 to 51 19	Encountered field ice light to medium brash with a few heavy pieces.
70	do	do	46 48 to 46 44	51 19 to 51 43	Slush.
71	do	Cape Race Radio	Cape Race		String of loose slob ice on shore.
72	Mar. 3	do	Cape Race		String of loose slob close to and moving east.
73	Mar. 4	Ice Patrol Plane	46 37 to 46 30 to 46 15 to 46 30	53 05 to 53 00 to 52 40 to 52 40	Southeastern limits of drift ice.
74	do	USCGC Castle Rock	St. Johns to 46 17	51 20	Large area slob and slush ice.
75	do	do	46 35 to 46 24	47 02 to 46 50	Passed through heavy close pack ice.
76	do	do	46 24 to 48 05	46 50 to 46 30	Eastern edge of pack ice.
77	do	do	48 28	46 32	Isolated drift ice.
78	do	Arnarsell	47 20	47 10	Pack ice all around, thickness 8 inches to several feet.
79	do	do	48 20	----------	Northern limit pack ice.
80	do	do	48 25	47 00	Berg.
81	do	do	48 05	47 10	Do.
82	do	do	46 50 to 47 20	47 10 to 47 10	Occasional strings of brash ice.
83	Mar. 5	Cape Race Radio	Cape Race		Scattered strings and local slob ice in all directions
84	Mar. 6	Lyngenfjord	49 18	44 44	Berg 80 feet high, 150 feet long.
85	do	do	49 11	45 10	Berg 60 feet high, 200 feet long.
86	do	do	48 40	45 58	Large berg.
87	do	USCGC Casco	46 18 to 46 24	52 42 to 53 04	Limits of slush ice. Ice 2 to 4 inches thick.
88	do	do	46 42	53 42	Widely scattered slush ice inch thick.
89	do	Newfoundland	48 35	46 30	Berg.
90	do	do	48 25	47 21	Large berg.
91	Mar. 8	Ice Patrol Plane	48 50 to 48 00 to 47 00 to 47 00 to 47 20 to 47 20 to 48 00	52 25 to 52 00 to 52 00 to 51 00 to 50 20 to 46 55 to 46 50	Limits of drift ice.
92	do	do	48 14	48 15	Large berg.
93	do	do	48 22	49 27	Berg.
94	do	do	48 39	49 00	Do.
95	do	do	48 43	47 00	Do.
96	do	do	48 52	45 56	Do.
97	do	do	48 53	45 59	Do.
98	do	do	49 03	46 42	Small berg.

TABLE OF ICE AND OBSTRUCTION REPORTS, SOUTH OF 50° N., 1950—Continued

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
99	Mar. 8	Ice Patrol Plane	48 08	46 33	Growler.
100	do	do	48 08	48 03	Do.
101	do	do	48 37	46 22	Do.
102	do	do	48 47	48 58	Do.
103	do	do	48 55	47 18	Do.
104	do	do	49 23	51 15	Do.
105	Mar. 9	Cape Race Radio	Cape Race		String of slob ice on horizon.
106	Mar. 10	Gripsholm	46 54 to 46 54	46 32 to 46 50	Ice field with heavy growlers extending northwest and west as far as could be seen.
107	do	USS Edisto	47 17	51 10	Patches of pancake and slush ice.
108	do	Gripsholm	46 36 to 46 06	47 07 to 47 36	Ice field to northwest as far as could be seen.
109	Mar. 11	Trollafoss	46 30 to 45 47	47 30 to 47 40	Strings of drift ice extending north as far as could be seen.
110	Mar. 12	Ice Patrol Plane	47 00 to 47 30 to 47 15 to 46 55 to 46 55 to 46 20 to 46 30 to 47 15	52 00 to 48 50 to 47 25 to 47 20 to 46 20 to 46 20 to 45 50 to 45 50	Outer limits of drift ice.
111	do	do	49 38	52 28	Berg.
112	do	do	49 41	52 38	Do.
113	do	do	49 44	52 55	Do.
114	do	do	49 58	52 20	Do.
115	do	do	49 55	51 20	Growler.
116	do	USCGC McCulloch	45 35	57 59	Concentration of field ice.
117	do	Wellington Kent	45 28	57 36	Heavy slob ice.
118	Mar. 13	Ice Patrol Plane	48 15 to 47 45 to 47 22 to 46 30 to 46 20 to 45 55 to 45 55 to 47 42 to 47 50 to 48 10	52 42 to 52 32 to 52 32 to 52 10 to 49 00 to 48 00 to 46 40 to 46 35 to 46 10 to 46 20	Limits of drift ice.
119	do	do	47 30 to 48 03 to 48 25	52 10 to 52 10 to 52 40	Western limit open pack ice.
120	do	do	47 45 to 48 10 to 48 30	47 00 to 47 10 to 48 10	Eastern limit open pack ice.
121	do	do	47 57	46 28	Berg (same as No. 90).
122	do	do	48 02	46 50	Berg (same as No. 92).
123	do	do	48 12	46 52	Berg (same as No. 95).
124	do	do	48 24	48 46	Growler.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
125	Mar. 15	Cape Race Radio	Cape Race		Strings of slob ice in all directions.
126	Mar. 16	Ice Patrol Plane	47 40 to 47 20 to 46 30 to 46 12 to 46 18 to 46 45 to 46 42 to 46 08 to 45 55 to 47 40	52 10 52 30 53 05 52 35 50 30 48 40 47 55 47 30 46 55 47 10	Limits of drift ice.
127	do	do	46 08	46 53	Small berg, 2 growlers (same as No. 67).
128	do	do	46 14	47 28	Small berg.
129	do	do	46 35	47 22	Berg.
130	do	do	46 40	47 17	Large berg.
131	do	do	46 46	47 02	Do.
132	do	do	47 00	47 36	Small berg.
133	do	do	47 23	47 05	Large berg.
134	do	do	47 45	45 15	Small berg (same as No. 90).
135	do	do	47 45	48 06	Small berg.
136	do	do	47 56	47 40	Do.
137	do	do	46 20	47 30	Growler.
138	do	do	47 20	47 48	Do.
139	do	USS Redbud	45 17	58 14	Extensive ice with tongue extending southwest to 45°00′ N., 58°19′ W.
140	do	do	45 00 to 45 00	58 19 58 00	Edge of field ice.
141	Mar. 17	Ice Patrol Plane	46 48 to 46 20 to 46 15 to 46 18	52 05 52 00 51 50 50 20	Limits of drift ice.
142	do	do	47 20 to 45 45 to 45 50 to 46 43 to 46 52	47 00 46 45 48 00 47 50 48 33	Do.
143	do	do	45 55	47 56	Small berg (same as No. 128).
144	do	do	45 56	47 31	Berg (same as No. 67).
145	do	do	46 07	47 02	Small berg.
146	do	do	46 15	46 40	Large berg.
147	do	do	47 00	46 55	Large berg and growler (same as No. 133).
148	do	do	45 50	46 08	4 growlers.
149	do	do	46 03	47 26	Growler.
150	do	do	46 36	47 27	Do.
151	do	do	47 18	47 45	Do.
152	Mar. 19	Cape Race Radio	Cape Race		Strings of slob ice in all directions.
153	Mar. 20	do	Cape Race		Do.
154	do	Newfoundland	45 05 to 44 55	60 10 59 35	Widely scattered areas, navigable field ice.
155	Mar. 21	Ice Patrol Plane	Ferryland Head to 46 05 to 46 00	 52 30 51 40	Western limits of drift ice.
156	do	do	46 20 to 46 00 to 46 00 to 46 25	47 50 47 50 47 10 47 25	Drift ice.
157	do	do	46 24	45 58	Small berg, 2 growlers (same as No. 146).
158	do	do	46 30	45 48	Small berg (same as No. 131).
159	do	do	46 03	46 48	Growler.
160	do	do	46 16	47 30	Do.
161	do	do	46 20	46 07	Do.

TABLE OF ICE AND OBSTRUCTION REPORTS, SOUTH OF 50° N., 1950—Continued

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
162	Mar. 21	Ice Patrol Plane	46 22	47 05	3 growlers.
163	do	Newfoundland	45 04 to 44 56 to 44 56 to 44 43	60 10 to 59 45 to 57 30 to 57 25	Southern limits of field ice.
164	do	USCGC Acushnet	44 29 to 44 14	57 13 to 57 00	Widely scattered ice.
165	Mar. 22	Ice Patrol Plane	45 45 to 45 55 to 46 50 to 48 13 thence northwest	47 15 to 46 50 to 46 40 to 46 30	Drift ice.
166	do	do	46 03	46 03	Berg.
167	do	do	46 12	45 19	Do.
168	do	do	46 15	46 13	Do.
169	do	do	46 37	45 19	Berg (same as No. 131).
170	do	do	47 18	47 18	Berg.
171	do	do	47 27	47 28	Do.
172	do	do	47 30	47 51	Do.
173	do	do	47 30	47 56	Do.
174	do	do	47 34	48 12	Do.
175	do	do	47 46	48 11	Do.
176	do	do	47 52	48 27	Do.
177	do	do	48 05	48 53	Do.
178	do	do	48 06	48 00	Growler.
179	do	USCGC Ingham	44 22	57 56	Detached areas of field ice 3 miles in diameter.
180	do	USCGC Acushnet	44 35	56 35	Scattered ice extending 2 miles in a northerly direction.
181	do	USCGC Unimak	46 12	45 21	Berg (same as No. 167).
182	do	do	46 21	45 21	Growler.
183	do	do	46 18	45 19	Do.
184	do	do	45 58	45 15	Small berg.
185	do	Joao Corte Real	46 12	47 25	String of brash ice 2 feet high covering area of 2 miles.
186	do	Dunsley	45 58	45 15	Small berg (same as No. 184).
187	do	USCGC Ingham	44 21 to 44 25 to 45 00	57 56 to 57 19 to 56 37	Large areas of drift ice.
188	Mar. 23	Ice Patrol Plane	48 30 to 47 20	53 00 to 52 30	Western limits of drift ice.
189	do	do	48 35 to 48 20 to 47 30	52 50 to 52 20 to 51 40	Western limits open pack.
190	do	do	47 48	47 42	Berg.
191	do	do	47 52	48 20	Berg (same as No. 176).
192	do	do	47 55	51 37	Berg.
193	do	do	47 57	48 20	Berg (same as No. 177).
194	do	do	47 58	48 50	Berg.
195	do	do	47 59	49 12	Do.
196	do	do	48 01	49 28	Do.
197	do	do	48 02	48 40	Do.
198	do	do	48 02	51 40	Do.
199	do	do	48 04	48 23	Do.
200	do	do	48 04	49 20	Do.
201	do	do	48 04	50 42	Do.
202	do	do	48 07	48 23	Do.
203	do	do	48 09	50 29	Do.
204	do	do	48 10	51 46	Do.
205	do	do	48 14	49 20	Do.
206	do	do	48 14	50 23	Do.
207	do	do	48 15	50 28	Do.
208	do	do	48 15	51 39	Do.
209	do	do	48 18	48 55	Do.
210	do	do	48 18	49 02	Do.
211	do	do	48 18	49 08	Do.
212	do	do	48 18	51 41	Do.
213	do	do	48 20	51 29	Do.
214	do	do	48 24	49 02	Do.
215	do	do	48 24	51 40	Do.
216	do	do	48 25	51 25	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
217	Mar. 23	Ice Patrol Plane	48 27	50 40	Berg.
218	do	do	48 35	50 30	Do.
219	do	do	48 36	50 40	Do.
220	do	do	48 37	50 52	Do.
221	do	do	48 37	51 30	Do.
222	do	do	48 37	52 10	Do.
223	do	do	48 40	50 45	Do.
224	do	do	48 43	50 38	Do.
225	do	do	48 45	48 48	Do.
226	do	do	48 47	50 20	Do.
227	do	do	48 48	50 28	Do.
228	do	do	48 52	51 35	Do.
229	do	do	49 05	51 10	Do.
230	do	do	49 05	50 37	Do.
231	do	do	49 13	50 26	Do.
232	do	do	49 18	50 30	Do.
233	do	do	48 00	47 48	2 growlers.
234	do	do	48 05	49 08	Growler.
235	do	do	48 05	50 00	Do.
236	do	do	48 06	49 56	Do.
237	do	do	48 07	49 40	Do.
238	do	do	48 10	47 38	Do.
239	do	do	48 10	48 17	Do.
240	do	do	48 47	48 53	Do.
241	do	do	48 52	49 10	Do.
242	do	do	48 55	51 20	6 growlers in 2-mile area.
243	do	do	49 02	50 55	2 growlers.
244	do	do	49 08	50 42	Growler.
245	do	do	49 08	50 52	2 growlers.
246	do	do	49 12	49 41	Growler.
247	do	do	49 15	49 20	Do.
248	do	do	49 18	49 32	Do.
249	do	do	49 28	49 47	Do.
250	do	USCGC Dexter	46 37	45 05	Berg (same as No. 169).
251	do	do	45 24	47 48	Drift ice.
252	do	Cape Race Radio	Cape Race		Light slob.
253	Mar. 24	Nova Scotia	46 22	44 45	Large berg (same as No. 168).
254	do	do	45 55	45 17	Small berg.
255	do	Manchester Progress	45 36	45 09	Growlers.
256	do	Nova Scotia	45 24 to 45 17	48 12 to 48 35	Encountered moderate pancake ice.
257	do	USCGC Ingham	45 28	49 38	Field ice.
258	Mar. 25	Mormacdale	45 35	45 04	Berg.
259	do	Sparreholm	48 55	48 15	Field ice.
260	do	USCGC Ingham	45 15 to 45 11	48 46 to 47 26	Entered area of pancake ice.
261	do	Cape Race Radio	44 21 to 44 25 to 45 00	57 56 to 57 19 to 56 37	Southern limits of drift ice.
262	Mar. 26	Acushnet (IP)	44 37 to 44 55	48 45 to 48 30	Southern limits light field ice.
263	do	USCGC Half Moon	45 33 to 45 21 to 45 18 to 45 00	47 44 to 47 55 to 48 23 to 48 45	Drift ice.
264	Mar. 27	Egton	44 30	58 40	Southern edge of drift ice extending in a northwesterly and northeasterly direction.
265	do	Nova Scotia	44 40	57 05	Strip of field ice.
266	do	Sgt. Jonah E. Kelley	44 35	57 30	Encountered scattered fields of ice extending as far as eye can see northward and eastward.
267	Mar. 28	Ice Patrol Plane	46 55 to 46 35 to 46 20 to 46 13 to 46 18 to 46 32	51 20 to 51 20 to 51 15 to 50 30 to 49 58 to 49 40	Western limits drift ice.

No.	Date	Name of vessel	North latitude ° ′	West longitude ° ′	Description
268	Mar. 28	Ice Patrol Plane	45 30 to 44 52 to 44 20 to 44 20 to 44 50 to 44 56 to 45 30 to 46 00 to 47 00	48 10 48 52 48 58 48 48 48 35 47 50 47 45 46 30 46 28	Eastern limits drift ice.
269	do	do	45 30	48 10	Berg.
270	do	do	45 38	48 09	Do.
271	do	do	45 57	47 32	Do.
272	do	do	45 58	47 41	Do.
273	do	do	46 33	47 00	Do.
274	do	do	46 42	46 50	Do.
275	do	do	46 48	47 06	Do.
276	do	do	45 28	48 18	Growler.
277	do	do	46 05	47 40	Do.
278	do	do	46 11	47 41	Do.
279	do	do	46 48	46 48	Do.
280	do	Cairnesk	43 58	48 38	Small area brash ice radius 3 miles.
281	do	Acushnet (IP)	46 00 to 45 30 to 45 18	46 55 47 12 47 50	Light drift ice.
282	do	do	45 04	47 50	Small growlers.
283	Mar. 29	Stockholm	44 00	48 25	Passed patches of field ice.
284	do	Fort Vercheres	44 03 to 44 50	48 52 48 18	Passed through scattered drift ice.
285	Mar. 30	Acushnet (IP)	45 20	47 42	Field ice several miles west with several large chunks or small growlers 4 miles west.
286	do	do	45 52	47 30	Drift ice.
287	do	Lieutenant Guillon	45 50	46 10	Ice field.
288	do	USCGC Sorrel	45 19	60 13	Entered southernmost edge of field of brash ice concentration 60 percent with few small growlers.
289	Mar. 31	Mormacelm	43 45	48 50	Passed light field and pancake ice.
290	do	Acushnet (IP)	45 26	48 10	3 small bergs several growlers. 5 miles northwest in heavy field ice.
291	do	Amsteldijk	43 20	48 57	Field ice.
292	do	USCGC Sorrel	45 23 to 45 28	60 11 58 14	Drift ice.
293	do	do	45 28 to 45 55	58 14 57 45	Close pack ice.
294	do	do	45 55 to 46 34	57 45 57 38	Scattered ice.
295	do	Acushnet (IP)	45 28	48 27	Small berg (same as No. 270).
296	do	do	45 20	48 33	Small berg and growler (same as No. 269).
297	do	do	45 02	48 42	Growler.
298	do	Bolivia	43 47	48 30	Drift ice.
299	Apr. 1	Acushnet (IP)	45 30 to 45 30 to 45 00 thence southwest beyond limits of visibility	47 30 48 10 48 30	Limits of field ice.
300	do	USNS General Blatchford	44 50 to 44 44	48 37 49 12	Passed a belt of field ice about 7 miles long and several small growlers.
301	do	Springdale	45 05	48 20	Large growler.
302	do	Acushnet (IP)	45 00	48 30	Berg (same as No. 269). Several growlers within 5 miles. Other radar targets within 6 miles, field ice extends east.

TABLE OF ICE AND OBSTRUCTION REPORTS, SOUTH OF 50° N., 1950—Continued

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
303	Apr. 2	Ice Patrol Plane	46 10 to 47 30	47 00 to 46 50	Eastern end of field ice.
304	...do	...do	46 38	47 02	Berg.
305	...do	...do	46 55	46 47	Do.
306	...do	Loradore	46 51	46 38	Field ice.
307	...do	Genepesca	46 00 to 45 45 and	48 10 to 47 57	6 bergs in 7½-mile radius.
308	...do	Loradore	45 48	47 20	Field ice extending west northwest.
309	Apr. 2	Acushnet (IP)	45 45 to 46 32 to 46 52 to 46 30	46 25 to 46 13 to 46 31 to 46 47	East edge of heavy ice pack. Numerous growlers in pack.
310	...do	...do	46 35	46 50	Berg.
311	...do	...do	46 55	46 38	Berg (same as No. 305).
312	...do	...do	46 35	46 43	Radar contact.
313	Apr. 3	Ice Patrol Plane	47 00 to 46 00 to 45 40 to 44 48 to 44 46 to 44 38 to 44 36 to 45 24 to 46 00 to 46 00 to 47 20	47 50 to 47 30 to 47 40 to 48 40 to 49 00 to 48 58 to 48 25 to 47 31 to 46 30 to 46 43 to 46 40	Limits of drift ice.
314	...do	...do	44 43	48 28	Berg (same as No. 269).
315	...do	...do	44 47	48 36	Berg (same as No. 270)
316	...do	...do	44 50	48 28	Berg.
317	...do	...do	44 57	48 20	Do.
318	...do	...do	45 03	48 12	Do.
319	...do	...do	45 15	47 42	Do.
320	...do	...do	45 23	48 00	Do.
321	...do	...do	45 24	47 48	Do.
322	...do	...do	45 29	47 40	Do.
323	...do	...do	45 33	47 29	Do.
324	...do	...do	46 35	46 58	Berg (same as No. 304).
325	...do	...do	46 38	46 51	Berg (same as No. 310).
326	...do	...do	44 17	48 21	Growler.
327	...do	...do	44 46	48 49	Do.
328	...do	...do	44 53	48 19	Do.
329	...do	...do	44 55	48 19	Do.
330	...do	...do	44 55	48 28	Do.
331	...do	...do	44 58	48 10	Do.
332	...do	...do	45 02	48 08	Do.
333	...do	...do	45 14	48 07	Do.
334	...do	...do	45 15	48 00	Do.
335	...do	...do	45 17	47 52	Do.
336	...do	...do	45 17	48 07	Do.
337	...do	...do	45 38	46 55	Do.
338	...do	...do	45 39	47 00	Do.
339	...do	...do	45 50	47 12	Do.
340	...do	...do	46 28	46 49	Do.
341	...do	...do	46 30	46 49	Do.
342	...do	Evergreen (IP)	45 16 to 45 22 to 45 15 thence northward	59 42 to 59 20 to 59 15	Limits drift ice.

TABLE OF ICE AND OBSTRUCTION REPORTS, SOUTH OF 50° N., 1950—Continued

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	'	°	'	
343	Apr. 3	Evergreen	45 to 45 thence southward	35 13	58 58	20 18	Limits drift ice.
344	do	do	45 to 45	15 14	58 58	16 10	Do.
345	do	Acushnet (IP)	45 to 45	11 07	47 47	45 51	Eastern edge of drift ice.
346	do	do	45	27	48	10	Berg (same as No. 320).
347	do	do	45	28	48	08	Berg.
348	do	do	45	10	48	12	Growler.
349	do	do	45	20	48	10	Do.
350	do	do	45	21	48	10	Do.
351	do	do	45	22	48	09	Do.
352	do	do	45	23	48	06	Do.
353	do	do	45	29	47	53	Do.
354	do	do	45	32	47	50	Do.
355	do	do	45	42	47	35	Do.
356	do	do	44	50	48	00	Berg and several growlers, heavy pack ice.
357	do	Canadian Department Transport.					Ice extends along east coast C pe Breton, Cape North to Scatari.
358	do	do	47 to 46 to 45 to 45 to 45 to Scatari	07 50 40 10 30	59 58 57 58 60	23 00 00 20 15	Estimated outside limits drift ice.
359	Apr. 4	Acushnet (IP)	45 to 45 to 44 to 44	07 03 53 49	47 47 47 48	51 57 57 01	Eastern limits of drift ice.
360	do	do	44	33	48	26	Southeastern limits of drift ice.
361	do	Canadian Department Transport.	15 miles off Cape Ray to 46 to 45 to 45 to 45	 50 40 10 35	 58 57 58 60	 00 00 20 15	Estimated outside limits of drift ice.
362	Apr. 5	USCGC Sorrel	44	36	49	16	Stationary radar target, possible berg.
363	do	Acushnet (IP)	44	40	47	58	Drift ice extends north-northeast.
364	do	do	44	39	47	59	Growlers.
365	do	do	44	26	48	53	Radar target, possible berg.
366	do	Rosa Thorden	44	50	48	02	Berg and growler.
367	Apr. 6	USCGC Sorrel	46 to 46	10 10	46 46	00 15	Brash ice.
368	do	do	46	07	46	09	Radar targets.
369	do	do	46	13	46	09	Do.
370	do	do	46	15	46	00	Do.
371	do	Acushnet (IP)	44	17	47	30	Southeastern edge of field ice, ice extending northeast.
372	do	do	44 to 44 thence northwest	47 48	47 47	30 10	Southern limit of field ice.
373	do	do	44	48	47	40	Berg (same as No. 319).
374	do	USCGC Sorrel	47	38	46	00	Small patch light brash.
375	do	Canadian Department Transport.	15 miles off Cape Ray to 46 to 46 to vicinity Louisberg	 40 40	 57 57	 50 50	Estimated outside limits drift ice.
376	Apr. 7	Ice Patrol Plane	44	13	48	48	Berg.
377	do	do	44	22	49	00	Berg (same as No. 270).
378	do	do	44	38	48	45	Berg.
379	do	do	44	43	48	46	Do.
380	do	do	41	46	48	52	Do.
381	do	Nova Scotia	47	26	51	59	Radar target, possible berg.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
382	Apr. 7	Acushnet (IP)	44 35	48 11	Growler.
383	do	do	44 30	48 30	2 radar targets within 5 miles, possible bergs.
384	do	do	44 11	48 40	Large berg (same as No. 271).
385	do	Nova Scotia	46 22 to 44 29	46 28 to 46 18	Encountered numerous wasting growlers and pieces of rotten hummocky ice.
386	do	do	46 11	46 49	Radar target, probably berg.
387	do	do	46 13	47 16	Do.
388	do	do	46 16	46 51	Do.
389	do	do	46 19	46 41	Do.
390	do	do	46 20	46 25	Do.
391	do	do	46 20	46 55	Do.
392	do	do	46 23	46 38	Do.
393	do	do	46 28	46 10	Several small growlers.
394	do	Canadian Department Transport.	15 miles north-northeast of St. Paul to 46 40 to 46 20 to vicinity of Louisburg	57 50 to 57 50	Estimated outside limits of field ice.
395	Apr. 8	Acushnet (IP)	43 51	48 51	Radar target, probably berg.
396	do	Canadian Department Transport.	East coast Cape Breton from Cape North to Portnova.		Close packed ice.
397	Apr. 10	do	East Coast Cape Breton from Cape North to Seatari.		Do.
398	do	do	60 miles north of Sable Island.		Estimated outside limits of field ice.
399	Apr. 11	Ice Patrol Plane	45 22	48 52	Berg (same as No. 376).
400	do	do	45 27	48 30	Berg.
401	do	do	45 34	48 23	Do.
402	do	do	45 41	48 48	Do.
403	do	do	45 38	48 27	Growler.
404	do	do	45 46	48 52	Do.
405	do	do	45 48	48 48	Do.
406	do	do	45 53	48 00	Do.
407	do	do	45 54	47 54	Do.
408	Apr. 12	Erland	48 55	49 20	Passed ice field 25 miles wide.
409	do	Acushnet (IP)	44 27	48 52	Small berg.
410	do	Canadian Department Transport.	From 5 miles off Cape North to 46 48 to 46 24	59 10 to 59 02	Outside limits field ice.
411	Apr. 13	Ice Patrol Plane	44 05	48 48	Small berg (same as No. 409).
412	do	do	44 35	49 07	Large berg (same as No. 376).
413	do	do	44 47	48 53	Medium berg (same as No. 400).
414	do	do	44 03	48 47	Growler.
415	do	do	44 05	48 52	Do.
416	do	do	46 00 to 46 03 to 46 12 to 46 12 to 46 27 to 16 00	46 52 to 46 39 to 46 38 to 46 46 to 46 35 to 46 52	Limits of drift ice.
417	do	Evergreen (IP)	43 20	48 50	Encountered drift ice.
418	do	Acushnet (IP)	44 56	48 45	Large berg (same as No. 401).
419	do	do	45 02	48 33	Large berg.
420	do	do	45 04	48 39	Growler.
421	do	do	45 46	47 56	Berg.
422	do	do	45 57	47 45	Growler.
423	do	do	45 59	46 53	Do.
424	do	Salacia	46 42	44 59	Berg.
425	do	do	46 50	44 55	Do.
426	do	do	46 40	45 20	Do.
427	do	do	46 21	45 28	Growler.
428	do	MATS Aircraft	45 30	47 50	Berg.
429	do	do	45 53	47 05	Do.
430	do	do	45 57	47 40	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
431	Apr. 13	Canadian Department Transport.	Cape North to 46 50 | 59 10 to 45 40 | 57 35 to 44 32 | 59 59 (30 miles north of Sable Island) to 44 58 | 60 47 to Whitehead		Outside limits field ice.
432	Apr. 14	Salacia	46 10	45 25	Growler.
433	do	Beavercove	45 34	47 55	Radar target, probably berg.
434	do	do	45 34	48 37	Do.
435	do	do	45 34	48 50	Do.
436	do	Acushnet (IP)	44 34	48 42	Berg.
437	do	do	44 14	48 41	Radar target, believed berg.
438	do	Mont Gaspe	45 42	47 21	2 Radar targets, possible bergs
439	do	do	45 42	47 38	3 Radar targets, possible bergs.
440	do	Acushnet (IP)	44 14	48 41	Berg. (same as No. 437).
441	do	do	43 57	48 41	Small berg (same as No. 409).
442	Apr. 15	Empress of Canada	47 11	45 42	Radar targets, possible bergs.
443	do	do	46 56	46 10	Do.
444	do	do	46 56	46 31	Do.
445	do	Cairnesk	46 52	45 45	Radar contact, possible berg.
446	do	Canadian Department Transport.	St. Paul to 46 30 | 59 00 to 45 30 | 58 00 to 30 miles north of Sable Island to 44 50 | 60 50 to vicinity Whitehead		Outside imits of drift ice.
447	Apr. 16	Acushnet (IP)	44 00	48 50	Small berg (same as No. 437).
448	do	USCGC Sorrel	48 36	46 06	Light drift ice south and west extends to horizon.
449	do	do	48 18	46 00	Eastern edge of ice field.
450	do	Helga Smith	48 30	48 00	Scattered drift ice to the south.
451	do	USCGC Sorrel	48 00	46 00	Eastern edge drift ice.
452	do	do	48 05	45 55	Berg.
453	do	do	48 03	46 04	Do.
454	do	do	48 10	46 10	Radar targets, possible bergs.
455	do	do	48 07	46 17	Do.
456	do	Acushnet (IP)	44 40	48 36	Berg (same as No. 402).
457	do	Svanefjell	46 35	44 50	Berg.
458	do	Ternefjell	46 18	47 16	Do.
459	do	Acushnet (IP)	44 32	48 51	Berg (same as No. 401).
460	do	do	44 27	48 52	Berg.
461	do	do	44 21	48 40	Do.
462	do	do	44 05	48 43	Berg (same as No. 441).
463	do	do	44 38	48 52	Berg (same as No. 400).
464	do	USCGC Sorrel	47 20	45 36	Southern limit, drift ice.
465	do	do	47 25	45 45	Berg.
466	do	do	47 13	45 24	Do.
467	do	Canadian Department Transport.	Cape North to 46 50 | 59 50 to 46 35 | 59 20 to 45 37 | 58 50 to 45 17 | 59 10 to 44 40 | 60 50 to 10 miles southwest Cranberry Light, Canso.		Outside limits of field ice.
468	Apr. 17	Ice Patrol Plane	46 17	46 23	Berg.
469	do	do	46 42	46 15	Do.
470	do	do	46 46	44 16	Berg (same as No. 457).
471	do	do	46 47	46 27	Berg.
472	do	do	46 55	46 36	Do.
473	do	do	47 03	44 23	Do.
474	do	do	47 05	45 06	Do.
475	do	do	47 08	44 58	Do.
476	do	do	47 08	46 21	Do.
477	do	do	47 09	44 42	Do.
478	do	do	47 09	45 58	Do.
479	do	do	47 11	45 51	Do.
480	do	do	47 13	46 33	Do.

TABLE OF ICE AND OBSTRUCTION REPORTS, SOUTH OF 50° N., 1950—Continued

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
481	Apr. 17	Ice Patrol Plane	46 41	46 20	Growler.
482	...do...	...do...	47 12	45 58	Do.
483	...do...	...do...	47 15	45 58	Do.
484	...do...	Cairnvalona	48 42	47 55	Entered field ice with heavy floes.
485	...do...	USCGC Sorrel	45 34	46 03	Radar target, possible berg.
486	...do...	Acushnet (IP)	44 07	48 31	Small berg (same as No. 409).
487	...do...	Cairnvalona	48 35	48 05	Medium berg.
488	...do...	...do...	48 50 to 48 20	47 38 48 22	Heavy field ice, close packed floes 30 feet long by 6 to 12 feet thick.
489	...do...	USCGC Tampa	44 02	48 29	Radar target, probably berg.
490	...do...	Beaverburn	47 17	45 16	Berg.
491	...do...	...do...	47 22	45 09	Growler.
492	...do...	...do...	47 16	46 07	Berg (same as No. 479).
493	...do...	...do...	47 09	46 10	2 Growlers.
494	...do...	...do...	47 17	46 11	Berg and 3 growlers (same as No. 478).
495	...do...	...do...	47 05	46 15	Large berg (same as No. 476).
496	...do...	...do...	47 04	46 25	Large berg (same as No. 480).
497	...do...	Canadian Department Transport.	From St. Paul to 46 35 to 45 00 to 25 miles north of Sable Island to 46 26 to vicinity Whitehead	 59 20 58 48 60 31	Outside limits field ice.
498	Apr. 18	Genepesca	46 10	47 40	Berg 200 feet long 50 feet high (same as No. 458).
499	Apr. 19	Tampa (IP)	44 24	48 40	Berg.
500	...do...	...do...	44 02	48 42	2 growlers
501	...do...	Canadian Department Transport.	From St. Paul to 46 35 to 45 30 to 45 00 to 25 miles north of Sable Island to 44 32 to vicinity of Canso	 59 20 58 50 58 45 60 43	Outside limits of field ice.
502	Apr. 20	Ice Patrol Plane	48 35 to 49 10 to 48 33 to 48 32	52 25 51 25 51 05 51 30	Outer limits drift ice.
503	...do...	...do...	48 20 to 48 27 to 48 15 to 48 10 to 47 57 to 48 17 to 48 28 to 48 40 to 49 20 to 49 20 to 49 55 to 49 55	51 25 50 25 50 05 48 20 48 05 47 38 48 00 50 18 50 20 50 10 52 10 52 50	Do.
504	...do...	...do...	48 10	50 25	Patch of drift ice.
505	...do...	...do...	47 31	46 40	Berg.
506	...do...	...do...	48 07	46 25	Do.
507	...do...	...do...	48 17	48 48	Do.
508	...do...	...do...	48 22	48 05	Do.
509	...do...	...do...	48 22	48 51	Do.
510	...do...	...do...	48 23	48 46	Do.
511	...do...	...do...	48 24	47 40	Do.
512	...do...	...do...	48 30	48 00	Do.
513	...do...	...do...	48 32	47 56	Do.
514	...do...	...do...	48 33	45 25	Do.
515	...do...	...do...	48 35	45 24	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
516	Apr. 20	Ice Patrol Plane	48 38	52 32	Berg.
517	do	do	48 45	52 34	Do.
518	do	do	48 46	46 22	Do.
519	do	do	48 46	51 17	Do.
520	do	do	48 47	51 04	Do.
521	do	do	43 53	46 40	Do.
522	do	do	48 53	52 36	Do.
523	do	do	48 56	52 27	Do.
524	do	do	48 58	51 05	Do.
525	do	do	48 58	52 38	Do.
526	do	do	49 00	50 50	Do.
527	do	do	49 00	52 15	Do.
528	do	do	49 04	50 20	Do.
529	do	do	49 04	50 25	Do.
530	do	do	49 04	52 55	Do.
531	do	do	49 05	52 38	Do.
532	do	do	49 07	52 32	Do.
533	do	do	49 08	50 50	Do.
534	do	do	49 08	51 22	Do.
535	do	do	49 10	50 50	Do.
536	do	do	49 10	52 03	Do.
537	do	do	49 10	52 28	Do.
538	do	do	49 12	50 53	Do.
539	do	do	49 12	51 55	Do.
540	do	do	49 12	52 55	Do.
541	do	do	49 16	50 47	Do.
542	do	do	49 17	50 24	Do.
543	do	do	49 17	50 51	Do.
544	do	do	49 17	52 34	Do.
545	do	do	49 18	53 00	Do.
546	do	do	49 20	51 48	Do.
547	do	do	49 24	52 56	Do.
548	do	do	49 25	52 32	Do.
549	do	do	49 27	51 14	Do.
550	do	do	49 28	52 25	Do.
551	do	do	49 30	52 32	Do.
552	do	do	49 32	52 36	Do.
553	do	do	49 34	52 24	Do.
554	do	do	49 44	52 28	Do.
555	do	do	49 45	53 16	Do.
556	do	do	49 48	52 27	Do.
557	do	do	49 50	53 15	Do.
558	do	do	49 55	53 17	Do.
559	do	do	49 58	52 52	Do.
560	do	do	49 58	53 25	Do.
561	do	USCGC Evergreen (IP)	44 29	48 32	Do.
562	do	Laurentia	47 55	44 17	Several growlers.
563	do	Canadian Department Transport.	From St. Paul to 46 35 to 45 30 to 44 56 to 44 32 to vicinity of Whitehead	 59 20 58 50 58 52 60 12	Outside limits of field ice.
564	Apr. 21	Ice Patrol Plane	47 50 to 48 30 to 49 48 to 49 50	53 06 51 45 52 20 52 40	Outer limits drift ice.
565	do	do	46 35	46 40	Berg.
566	do	do	46 58	46 37	Do.
567	do	do	47 01	45 26	Do.
568	do	do	47 02	46 07	Do.
569	do	do	47 07	44 39	Do.
570	do	do	47 07	45 26	Do.
571	do	do	47 09	45 35	Do.
572	do	do	47 12	46 04	Do.
573	do	do	47 12	46 30	Do.
574	do	do	47 14	45 39	Do.
575	do	do	47 14	46 00	Do.
576	do	do	47 14	46 08	Do.
577	do	do	47 15	45 41	Do.
578	do	do	47 15	46 13	Do.
579	do	do	47 17	46 02	Do.
580	do	do	47 18	45 06	Do.
581	do	do	47 20	46 08	Do.
582	do	do	47 21	44 41	Do.
583	do	do	47 24	44 46	Do.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	'	°	'	
584	Apr. 21	Ice Patrol Plane	47	24	45	53	Berg.
585	do	do	47	25	45	46	Do.
586	do	do	47	26	45	45	Do.
587	do	do	47	27	44	54	Do.
588	do	do	47	28	46	07	Do.
589	do	do	47	30	44	53	Do.
590	do	do	47	31	45	41	Do.
591	do	do	47	32	45	21	Do.
592	do	do	47	33	45	58	Do.
593	do	do	47	35	46	30	Do.
594	do	do	47	36	45	21	Do.
595	do	do	47	37	45	31	Do.
596	do	do	47	37	46	23	Do.
597	do	do	47	38	45	57	Do.
598	do	do	47	38	46	13	Do.
599	do	do	47	50	48	50	Do.
600	do	do	48	33	52	12	8 bergs, 10 miles radius.
601	do	do	49 00 to 50 00 and west of		52	00	20 bergs in pack ice
602	do	do	47	15	44	43	Growler.
603	do	do	47	15	44	50	Do.
604	do	do	47	21	45	55	Do.
605	do	do	47	23	45	42	Do.
606	do	do	47	24	44	57	Do.
607	do	do	47	25	45	59	Do.
608	do	do	47	32	46	02	Do.
609	do	do	47	37	45	56	Do.
610	do	Evergreen (IP)	44	29	48	32	Berg.
611	do	Tampa (IP)	44	30	48	34	Do.
612	do	do	44	41	48	42	Do.
613	do	do	44	45	48	24	Do.
614	do	do	44	46	48	32	Do.
615	do	do	44	43	48	21	Growler.
616	do	Beaverlake	45	43	47	59	Large berg.
617	do	do	45	51	47	43	Small berg and growlers.
618	do	Rouen	46	06	47	27	Small berg.
619	do	do	46	05	47	35	Growler.
620	do	do	46	05	48	25	Do.
621	do	Tricape	45	47	47	59	Large berg (same as No. 616).
622	do	do	45	41	48	00	Small berg.
623	Apr. 22	Stavangerfjord	47 27 to 47 38		48 30 to 47 10		Edge of field ice.
624	do	do	47	41	47	35	Radar target, possible berg.
625	do	do	47	45	46	45	Do.
626	do	do	47	42	46	42	Do.
627	do	do	47	44	46	30	Do.
628	do	do	47	46	47	07	Do.
629	do	Montclair	47	37	49	42	Several thick pieces of ice dangerous to navigation.
630	do	Tampa (IP)	44	12	48	55	Berg.
631	do	do	44	15	48	47	Do.
632	do	Delilian	47	49	44	32	Growler.
633	do	do	47	47	44	39	Do.
634	do	do	47	43	45	04	Small berg.
635	do	do	47	48	45	08	Low flat berg.
636	do	do	47	39	45	22	Large berg.
637	do	do	47	35	45	24	Do.
638	do	do	47	33	45	27	Berg.
639	do	do	47	28	45	27	Do.
640	do	do	47	24	45	29	Do.
641	do	do	47	36	45	29	Do.
642	do	do	47	23	45	36	Do.
643	do	do	47	33	45	37	Do.
644	do	do	47	29	45	37	Do.
645	do	do	47	30	45	42	Do.
646	do	do	47	30	45	49	Do.
647	do	do	47	21	45	53	Do.
648	do	do	47	32	45	56	Do.
649	do	do	47	29	45	58	Do.
650	do	do	47	28	46	09	Do.
651	do	do	47	15	46	09	Do.
652	do	do	47	26	46	12	Do.
653	do	do	47	41	45	32	Growler.
654	do	do	47	28	45	36	Do.
655	do	do	47	33	45	37	Do.
656	do	do	47	30	45	42	Do.
657	do	do	47	30	45	49	Do.
658	do	do	47	21	45	53	Do.

TABLE OF ICE AND OBSTRUCTION REPORTS, SOUTH OF 50° N., 1950—Continued

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
659	Apr. 2	Delilian	47 32	45 56	Growler.
660	do	do	47 15	46 09	Do.
661	do	Canadian Department Transport.	From 15 miles west of Cape Ray to 46 50	59 00 to 45 10	58 50 to 44 45	60 50 to vicinity of Whitehead		Estimated outside limits of field ice.
662	Apr. 23	Ice Patrol Plane	43 41	49 28	Berg.
663	do	Tampa (IP)	43 32	49 06	Berg and growler (same as No. 631).
664	do	do	43 32	49 12	Berg and growler (same as No. 630).
665	do	Cairnavon	47 28	48 41	Radar targets, probably bergs.
666	do	do	47 29	48 45	Do.
667	do	do	47 31	48 43	Do.
668	do	Delilian	47 21	46 31	Berg.
669	do	do	47 15	46 30	Do.
670	do	do	46 59	46 44	Do.
671	do	do	47 11	46 30	Growlers.
672	Apr. 24	Tampa (IP)	43 18	49 11	Berg and growlers (same as No. 631).
673	do	do	43 19	49 21	Berg and growlers (same as No. 630).
674	do	L'Aventure	44 53	50 07	Radar contacts, possibly growlers.
675	do	GJDM (Radio Call)	47 59	46 21	Radar contact, possible berg.
676	do	do	47 49	46 54	Large berg.
677	do	Trollafoss	46 24	50 26	Radar target.
678	do	do	47 02	50 01	Do.
679	do	Tampa (IP)	43 13	49 25	2 bergs, many growlers (same as Nos. 630 and 631).
680	do	Nova Scotia	47 24	46 04	Large berg and growlers.
681	do	do	47 38	46 01	Berg.
682	do	do	47 34	46 17	Do.
683	do	do	47 32	46 20	Do.
684	do	do	47 28	46 22	Do.
685	do	do	47 30	46 11	Growler.
686	do	do	47 30	47 13	Do.
687	do	Tidaholm	44 17	47 45	Growlers.
688	do	Empress of Canada	46 11	47 34	Radar target.
689	do	do	46 31	46 57	Do.
690	do	do	46 15	47 23	Large berg.
691	do	Fjallfoss	43 49	49 17	Berg.
692	do	Empress of Canada	46 34	45 49	Do.
693	do	do	46 45	45 43	Do.
694	do	do	46 46	45 41	Do.
695	do	do	46 47	45 32	Do.
696	do	do	46 53	45 55	Do.
697	do	do	46 57	45 56	Do.
698	do	do	46 49	45 01	Growler.
699	do	do	46 50	45 39	Do.
700	do	do	46 51	45 35	Do.
701	do	do	46 55	45 58	Do.
702	do	do	46 51	45 55	Do.
703	do	do	46 57	45 52	Do.
704	do	do	47 00	45 51	Do.
705	do	Topdalsfjord	43 34	49 19	Berg and growlers.
706	do	do	43 45	49 04	Berg.
707	Apr. 25	Nova Scotia	47 20	48 10	Do.
708	do	do	47 14	48 14	Do.
709	do	do	47 25	48 01	Radar target.
710	do	do	47 20	47 39	Field ice.
711	do	City of Liverpool	47 22	45 52	Small berg.
712	do	do	47 19	46 04	Large berg.
713	do	HOTG (Radio Call)	43 10	49 16	Berg (same as No. 679).
714	do	do	43 20	49 28	Do.
715	do	City of Liverpool	47 01	46 08	Several growlers within 5-mile radius.
716	do	Canadian Department Transport.	10 miles east of St. Paul to 40 miles east and south of Scatari to 20 south of Canso.		Estimated outside limits of field ice.
717	Apr. 26	Ice Patrol Plane	43 21	49 00	Berg.
718	do	do	43 29	48 52	Do.
719	do	USCGC Mackinac	47 17	48 19	Do.
720	do	do	47 21	47 33	Do.
721	do	do	47 15 to 47 25	48 25 and to 47 40	15 growlers.
722	do	do	47 15	47 53	Radar target.
723	do	do	47 39	46 48	Berg.

No.	Date	Name of vessel	North latitude ° '	West longitude ° '	Description
724	Apr. 26	USCGC Mackinac	47 37	46 35	Berg.
725	do	do	47 44	46 48	Do.
726	do	do	47 56	46 15	Do.
727	do	do	48 04	46 02	Do.
728	do	do	47 44	46 48	5 growlers.
729	do	do	47 50	46 38	Growler.
730	do	do	47 41	46 21	2 growlers.
731	do	do	48 04	46 02	Growler.
732	do	do	48 07	46 00	Do.
733	do	do	47 46	46 33	Radar target.
734	do	do	48 06	46 26	Do.
735	do	City of Liverpool	46 48 to 46 37	47 07 to 47 43	Several bergs.
736	do	do	47 19	46 02	Large berg.
737	do	do	47 04	46 08	Several growlers within 5-mile radius.
738	do	Ascania	46 06	45 19	Berg and 3 growlers.
739	do	LaCumbre	48 20	45 46	Berg.
740	do	do	47 45 to 17 49	46 00 to 45 49	26 bergs and numerous growlers.
741	do	Hemsefjell	46 06	47 42	Berg (same as No. 690).
742	do	do	46 08	47 44	Growler.
743	do	Newfoundland	48 00	46 51	2 bergs, several small growlers.
744	do	USCGC Duane	48 06	46 55	Berg.
745	do	do	48 04	46 49	Do.
746	do	do	48 59	46 45	Growler.
747	do	do	47 58	46 48	Do.
748	do	do	47 46	46 48	Do.
749	do	do	47 19	47 02	Radar target.
750	do	do	47 11	47 02	Do.
751	do	do	47 45	47 28	Do.
752	do	do	47 23	47 32	Do.
753	do	Newfoundland	48 30	46 23	Growler.
754	do	do	48 23	46 12	Large berg.
755	do	do	48 16	46 06	Berg.
756	do	do	48 13	46 04	Do.
757	do	do	48 15	45 55	Do.
758	do	Canadian Department Transport.	From Scatari Light to 45 20 to 45 04 to 45 20	59 14 to 60 08 to 60 28	Small fields and narrow strings with clear water inside and outside this line.
759	Apr. 27	LaCumbre	47 31	16 36	Berg.
760	do	Newfoundland	48 18	46 23	Growler.
761	do	do	48 16	16 36	Berg.
762	do	St. Stephen	47 03	46 38	Radar target.
763	do	do	48 01	46 36	Do.
764	do	do	47 43	46 53	Growler.
765	do	do	47 17	47 24	Berg (same as No. 729).
766	do	do	47 22	47 28	Growler.
767	do	do	47 25	47 29	Do.
768	do	Beaverbrae	47 01	45 45	Berg.
769	do	do	46 58	16 45	Do.
770	do	do	46 53	46 51	Large berg and growler.
771	do	do	47 45	15 08	Berg.
772	do	do	46 52	47 02	Large berg.
773	do	do	46 42	47 01	Berg.
774	do	do	46 45	47 05	Growler.
775	do	do	47 46	47 08	Berg and growler.
776	do	do	46 41	47 10	Growler.
777	do	do	46 41	47 03	Large berg and growler.
778	do	Bristol City	46 34	46 27	Small berg.
779	do	do	46 33	46 38	Berg and 2 growlers.
780	do	do	46 29	46 32	Berg.
781	do	do	46 37	46 44	Do.
782	do	do	46 28	46 45	Do.
783	do	do	46 30	46 47	Do.
784	Apr. 28	Ice Patrol Plane	43 10	47 57	Do.
785	do	do	45 05	48 30	Do.
786	do	do	45 17	17 40	Do.
787	do	do	45 37	48 30	Do.
788	do	do	45 55	47 02	Do.
789	do	do	46 42	47 24	Do.
790	do	do	46 25	47 08	Do.
791	do	do	46 33	46 30	Do.
792	do	do	46 35	44 00	Radar target.
793	do	do	46 43	46 40	Berg (same as No. 770).
794	do	do	43 10	47 45	Growler.
795	do	do	43 10	47 50	Do.
796	do	do	43 18	47 30	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
797	April 28	Ice Patrol Plane	45 22	48 30	Growler.
798	do	do	45 52	47 00	Do.
799	do	do	46 35	46 02	Do.
800	do	do	46 48	46 37	Do.
801	do	MATS Aircraft	45 20	47 55	Large berg (same as No. 786).
802	do	Beaverford	46 49	46 19	Small berg.
803	do	do	46 52	46 25	Large berg.
804	do	do	46 54	46 37	Do.
805	do	do	46 47	46 52	Growler.
806	do	Nova Scotia	45 07	59 41	Field ice running northeast and south west.
807	do	Canadian Department Transport.	From St. Paul to 46 45 to 45 10 to 44 58 to 45 20	 59 25 59 28 59 43 60 20	Limits of open strings and patches of ice.
808	Apr. 29	Moveria	47 56	45 33	Berg and 2 growlers.
809	do	do	46 58	47 38	Growler.
810	do	do	47 32	46 12	Radar target.
811	do	do	47 29	46 16	Do.
812	do	Beaverburn	46 23	46 19	Bergs.
813	do	do	46 26	45 53	Do.
814	do	Canadian Department Transport.	From 10 miles off St. Paul to 47 00 to 46 00 to 45 10 to 45 20	 59 30 59 30 59 30 60 20	Limits of open strings and patches of ice.
815	Apr. 30	Empress of France	46 53	46 59	Growler.
816	do	do	47 17	45 14	Berg.
817	do	do	46 51	46 49	Berg and growler.
818	do	do	47 18	45 23	Growlers.
819	do	do	46 48	46 54	Berg.
820	do	do	46 51	46 55	Do.
821	do	do	47 19	45 02	Do.
822	do	do	47 00	46 34	Do.
823	do	Manchester Port	47 34	45 38	Do.
824	do	do	47 26	45 30	Do.
825	do	do	47 25	45 28	Do.
826	do	do	47 50	44 48	Do.
827	do	Beavercove	47 26	48 57	Narrow strip of field ice.
828	do	do	47 32	48 36	Berg.
829	do	Beaverglen	46 34	46 33	Do.
830	do	do	46 36	46 07	Do.
831	do	do	46 30	45 57	Do.
832	do	do	46 53	45 20	Do.
833	do	do	46 30	45 51	Do.
834	do	do	46 36	46 36	Growler.
835	do	do	46 42	45 42	Do.
836	do	do	47 03	44 15	Growlers.
837	do	Canadian Department Transport.	From 20 miles east of St. Paul to 46 40 to 46 00 to 45 00	 59 10 59 00 59 10	Outside limits loose ice.
838	May 1	Ice Patrol Plane	45 30	45 45	Berg.
839	do	do	45 37	45 53	Do.
840	do	do	45 48	45 12	Do.
841	do	do	46 43	46 08	Do.
842	do	do	46 45	44 30	Do.
843	do	do	46 45	44 25	Growler.
844	do	Torr Head	48 01	45 23	Berg.
845	do	Basilisk	46 37	48 28	Growler.
846	do	Canadian Department Transport.	10 miles west of St. Paul to 46 40 to 45 50	 59 10 59 00	Estimated outside limits widely scattered field ice.
847	May 2	Torr Head	47 54	45 48	Berg.
848	do	Kent County	46 05	46 01	Large berg.
849	do	Blairdevon	47 36	45 36	3 growlers within 2 miles radius.
850	do	do	48 00	45 13	Berg (same as No. 844).
851	do	Basilisk	46 20	45 55	Berg.
852	do	do	46 18	46 10	Do.
853	do	do	46 05	47 08	Do.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
854	May 2	Basilisk	46	12	47	00	Growler.
855	...do	Carrier	44	18	46	07	Berg.
856	...do	Blairdevon	47	21	45	55	Do.
857	...do	...do	47	20	46	02	Do.
858	...do	Canadian Department Transport.	From St. Paul to 47	00	59	40 to 30 miles off Flint Island	Outside limits field ice.
859	May 3	Norwegian	45	07	48	20	Medium berg.
860	...do	Canadian Department Transport.	From 10 miles east of St. Paul to 46	30	59	10	Estimated outside limits field ice.
			to 44	50	59	00	
861	May 4	Belray	47	04	49	53	Berg and 2 small growlers.
862	...do	...do	48	00	50	37	Berg.
863	...do	...do	47	49	50	37	Growler.
864	...do	Gripsholm	45	06	47	39	Berg.
865	...do	CSOT (Radio Call)	46	55	47	33	Berg (same as No. 828).
866	May 5	Ice Patrol Plane	46	43	44	10	Berg.
867	...do	...do	47	11	45	52	Do.
868	...do	...do	47	15	45	44	Do.
869	...do	...do	47	26	45	16	Do.
870	...do	...do	48	48	52	51	Do.
871	...do	...do	46	19	45	28	Growler.
872	...do	...do	46	21	44	10	Do.
873	...do	CSOT (Radio Call)	46	45	48	24	Berg.
874	...do	Asia	47	18	45	18	Large berg (same as No. 869).
875	...do	...do	47	14	45	28	Large berg, 150 feet high, 450 feet long.
876	...do	Manchester Progress	46	42	46	13	Growler.
877	...do	...do	46	42	46	16	Do.
878	...do	...do	46	42	46	18	Do.
879	...do	...do	46	42	46	20	Do.
880	...do	...do	46	39	46	23	Berg.
881	...do	Tennessee	46	45	48	25	2 bergs (same as No. 873).
882	...do	Canadian Department Transport.	St. Paul to 46	30	59	10	Outside limits of field ice.
			to 45	55	59	00 to vicinity Forehu	
883	May 6	Ice Patrol Plane	47	54	52	05	Outer limits drift ice.
			to 48	33	51	00	
			to 49	20	52	03	
			to 49	40	51	55	
			to 49	40	52	15	
			to 49	57	52	35	
884	...do	...do	45	55	46	36	Berg.
885	...do	...do	46	32	44	14	Do.
886	...do	...do	46	38	46	23	Do.
887	...do	...do	46	42	45	59	Do.
888	...do	...do	46	48	48	38	Berg (same as No. 873).
889	...do	...do	46	58	45	37	Berg.
890	...do	...do	47	05	45	17	Do.
891	...do	...do	47	08	45	03	Do.
892	...do	...do	47	12	51	19	Do.
893	...do	...do	47	14	50	30	Do.
894	...do	...do	47	22	51	28	Do.
895	...do	...do	47	25	50	53	Do.
896	...do	...do	47	29	51	18	Do.
897	...do	...do	47	33	50	37	Do.
898	...do	...do	47	36	49	33	Do.
899	...do	...do	47	38	51	39	Do.
900	...do	...do	47	48	52	23	Do.
901	...do	...do	47	50	51	00	Do.
902	...do	...do	47	52	52	45	9 bergs.
903	...do	...do	48	08	52	23	Berg.
904	...do	...do	48	11	52	18	Do.
905	...do	...do	48	34	51	40	Do.
906	...do	...do	48	38	53	19	Do.
907	...do	...do	48	40	51	47	Do.
908	...do	...do	48	48	52	51	Do.
909	...do	...do	48	50	53	09	Do.
910	...do	...do	48	52	51	59	Do.
911	...do	...do	48	53	51	53	Do.
912	...do	...do	48	57	52	10	Do.
913	...do	...do	48	59	52	04	Do.
914	...do	...do	49	01	52	11	Do.
915	...do	...do	49	15	53	20	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
916	May 6	Ice Patrol Plane	49 35	52 09	Berg.
917	do	do	49 35	53 31	Do.
918	do	do	49 37	53 24	Do.
919	do	do	49 44	53 31	Do.
920	do	do	49 46	53 35	Do.
921	do	do	46 25	45 27	Growler.
922	do	do	46 45	45 04	Do.
923	do	do	47 09	50 12	Do.
924	do	do	47 15	44 45	Do.
925	do	do	47 22	50 24	Do.
926	do	do	47 26	49 25	Do.
927	do	do	47 33	51 51	Do.
928	do	do	47 35	50 50	Do.
929	do	do	47 36	51 13	Do.
930	do	do	47 40	51 10	Do.
931	do	do	47 49	51 34	Do.
932	do	do	47 51	50 12	Do.
933	do	do	47 52	51 31	Do.
934	do	Acushnet (IP)	44 23	47 12	Growler rapidly breaking up (same as No. 855).
935	do	American Attorney	43 42	45 04	Berg.
936	do	Eastwater	46 57	50 18	Do.
937	do	Wendover	46 18	44 02	Berg (same as No. 885).
938	do	L'Aventure	46 50	50 10	Berg (same as No. 936).
939	do	Wendover	46 00	44 53	Growler.
940	do	Eastwater	46 50	49 25	Berg.
941	do	do	46 45	48 56	Berg (same as No. 873).
942	do	Bassano	46 32	47 44	Growler.
943	do	Beaverlake	46 30	46 20	Large berg.
944	do	do	46 27	45 57	Berg.
945	do	Bassano	46 46	45 57	Do.
946	do	do	46 53	46 00	Do.
947	do	do	47 07	45 13	5 growlers.
948	do	do	47 10	45 30	Berg.
949	do	do	47 05	45 42	Do.
950	May 7	Unidentified ship	46 46	45 14	Berg (same as No. 945).
951	do	Empress of Canada	46 29	46 28	Radar target.
952	do	Beaverlake	46 46	45 15	Berg (same as No. 945).
953	do	Unidentified ship	47 21	51 53	Berg (same as No. 899).
954	do	Ranenfjord	46 32	44 24	Large berg.
955	do	Fjallfoss	44 58	46 18	Berg.
956	do	do	44 59	46 08	Do.
957	do	do	44 53	45 55	Do.
958	do	do	45 09	46 00	Do.
959	do	do	45 23	45 05	Do.
960	do	Rutenfjell	47 40	51 33	Do.
961	do	Canadian Department Transport.	45 50 to 45 50	58 00 to 60 00	Scattered patches of strings and isolated heavy pieces.
962	May 8	Triberg	45 25	45 12	Several small pieces of ice.
963	do	L'Aventure	47 32	51 54	Radar target, probably berg.
964	do	Belnor	44 26	44 20	Passed ice.
965	do	Ascania	45 31	49 53	Radar target.
966	do	MATS Aircraft	45 21	44 36	Berg (same as No. 959).
967	do	do	46 20	47 20	Berg (same as No. 828).
968	do	do	45 55	49 07	Berg.
969	do	do	45 45	49 30	Do.
970	do	Canadian Department Transport.		58 00	Eastern limit widely scattered strings and isolated heavy pieces.
971	May 9	Nova Scotia	48 05	51 21	Radar target.
972	do	LaCumbre	45 10	45 30	Berg and numerous growlers.
973	do	do	45 21	45 25	Berg.
974	do	Noreita	45 26	45 17	Do.
975	do	Venezuela	46 05	42 30	2 growlers.
976	do	Irish Cedar	47 08	49 23	Berg (same as No. 898).
977	do	Beaverdell	47 12	45 04	Berg.
978	do	Georgic	47 15	45 09	Berg (same as No. 977).
979	do	Irish Cedar	47 32	48 12	Berg.
980	May 10	Ice Patrol Plane	45 10	45 14	Do.
981	do	do	45 10	45 19	Do.
982	do	do	46 00	44 49	Do.
983	do	Evergreen (IP)	44 55	45 31	Berg (same as No. 980).
984	do	do	44 58	45 44	Berg (same as No. 981).
985	do	Evviva	43 50	43 18	Berg (same as No. 935).
986	do	Noreita	45 06	46 01	Berg (same as No. 981).
987	do	do	45 08	46 01	Berg (same as No. 980).
988	do	Canadian Department Transport.	46 18 to 46 40 and	59 29 to 59 50	Widely scattered pieces.
989	May 11	Ice Patrol Plane	44 08	43 12	Berg and growler (same as No. 935).

TABLE OF ICE AND OBSTRUCTION REPORTS, SOUTH OF 50° N., 1950—Continued

No.	Date	Name of vessel	North latitude °	′	West longitude °	′	Description
990	May 11	Ice Patrol Plane	45	04	44	11	Berg.
991	---do	-----do	45	12	45	20	Do.
992	---do	-----do	45	35	44	35	Do.
993	---do	-----do	46	12	43	18	Do.
994	---do	-----do	46	22	45	45	Do.
995	---do	-----do	46	30	45	25	Do.
996	---do	-----do	46	38	45	19	Do.
997	---do	-----do	47	05	44	32	Do.
998	---do	-----do	46	42	45	15	3 bergs.
999	---do	-----do	45	35	43	51	Growler.
1000	---do	-----do	45	51	43	59	Do.
1001	---do	-----do	46	02	43	25	Do.
1002	---do	-----do	46	06	43	05	Do.
1003	---do	-----do	46	55	47	41	Do.
1004	---do	-----do	47	35	47	25	Do.
1005	---do	Manchester Commerce	46	44	45	45	Large berg.
1006	---do	MATS Aircraft	45	12	45	47	2 Bergs.
1007	---do	Fort Cadotte	47	12	44	35	Berg (same as No. 997).
1008	---do	MATS Aircraft	43	57	42	36	Berg (same as No. 935).
1009	---do	Acushnet (IP)	46	56	47	29	Berg.
1010	---do	Saimaa	44	02	43	10	Berg (same as No. 935).
1011	---do	Bowhill	47	01	59	36	Heavy patches of drift ice stretching east and northward.
1012	---do	-----do	47	09	59	59	Strings heavy drift ice in south and westerly direction.
1013	May 12	Acushnet (IP)	47	21	44	37	Small berg and growler (same as No. 997).
1014	---do	Signeborg	47	19	47	28	Berg.
1015	---do	Grey County	47	20	47	25	Small berg (same as No. 1014).
1016	---do	PAA Aircraft	49	27	50	45	Berg.
1017	---do	-----do	49	10	52	00	Do.
1018	May 13	Cairnesk	48	20	47	14	Radar contact, possible berg.
1019	---do	Acushnet (IP)	46	45	47	19	Berg (same as No. 1009).
1020	---do	Cairnesk	47	52	48	44	Large berg and small pieces.
1021	---do	Lord O'Neill	47	13	46	57	Small berg (same as No. 1014).
1022	---do	Mathilda Thorden	48	23	49	49	Berg.
1023	---do	-----do	48	57	48	50	Do.
1024	---do	Acushnet (IP)	47	42	47	58	Large berg and growlers.
1025	---do	-----do	47	56	48	35	Large berg and growler (same as No. 1020).
1026	---do	Blairesk	48	19	47	03	Bergy bit and 2 growlers.
1027	---do	-----do	47	51	48	23	4 growlers.
1028	---do	-----do	47	54	48	30	Berg and growlers (same as No. 1020).
1029	---do	-----do	47	59	48	27	Bergy bits.
1030	---do	Delilian	47	07	45	11	Berg.
1031	---do	-----do	47	33	44	21	Berg and 2 growlers.
1032	---do	Beaverford	47	56	49	08	Small berg.
1033	---do	Empress of Scotland	48	30	49	13	Berg and growler.
1034	---do	-----do	48	09	49	02	Berg.
1035	May 14	Evergreen (IP)	46	08	45	00	Do.
1036	---do	Lyngenfjord	48	25	50	14	Do.
1037	---do	-----do	48	09	50	33	Do.
1038	---do	Beaverbrae	47	38	47	37	Berg.
1039	---do	Hugo Nielsen	49	28	51	14	2 Bergs.
1040	---do	-----do	48	55	50	41	Berg.
1041	---do	-----do	49	14	50	48	Pack ice extending 20 miles.
1042	May 15	USS Redbud	49	00	51	12	Outer limit pack ice extending northwest and southwest. Scattered bergs and growlers outside of pack.
1043	---do	Empress of Canada	48	17	49	50	Berg (same as No. 1036).
1044	May 16	Elysia	47	14	45	22	Radar target.
1045	---do	Acushnet (IP)	46	00	47	30	Radar target (same as No. 1009).
1046	---do	-----do	45	56	47	35	Small berg (same as No. 1009).
1047	---do	Beaverburn	48	11	48	42	Radar target.
1048	---do	-----do	48	04	48	46	Do.
1049	May 17	Prins Alexander	42	12	47	27	Do.
1050	---do	Marengo	47	43	47	27	Radar target, probably berg.
1051	May 18	-----do	47	39	48	24	Radar target.
1052	---do	Acushnet (IP)	45	34	48	00	Radar target, possible berg (same as No. 1009).
1053	---do	Beaverglen	46	11	49	02	Radar target.
1054	---do	-----do	46	07	49	19	Do.
1055	---do	-----do	45	54	49	50	Do.
1056	---do	GJDM (Radio Call)	48	00	50	02	3 radar targets.
1057	---do	-----do	48	01	50	03	Radar target.
1058	---do	-----do	48	00	49	58	Do.
1059	---do	Acushnet (IP)	45	27	48	20	Small berg (same as No. 1009).
1060	---do	GJDM (Radio Call)	48	22	49	33	Berg.
1061	May 19	Acushnet (IP)	45	13	48	30	Small berg.
1062	---do	Margarita Chandris	47	20	39	17	Do.
1063	---do	Moveria	46	50	40	53	2 bergs. One of these appears large and probably 200 feet high.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
1064	May 19	Sibley Park	47 04	45 50	Berg and growler.
1065	do	USCGC Cook Inlet	48 42	50 48	Bergs.
1066	do	do	49 06	50 34	5 growlers in area 2 square miles.
1067	do	Acushnet (IP)	45 11	48 29	Small berg (some as No. 1009).
			From		
			49 10	53 10	
			to		
1068	May 20	Ice Patrol Plane	48 55	52 30	Eastern and southern limits drift ice.
			to		
			49 20	52 10	
			to		
			50 00	52 40	
1069	do	Springtide	48 10	49 00	Berg.
1070	do	Tampa (IP)	44 55	48 39	Bergs (same as No. 1009).
1071	do	Stockholm	48 00	39 52	Growler.
1072	do	Mormacport	48 00	40 00	Growler (same as No. 1071).
1073	do	Stockholm	46 58	41 40	Berg.
1074	do	Prins Willem	46 58	52 16	Radar target.
1075	do	Lake Minnewanka	48 09	52 37	Berg 100 feet high.
1076	May 21	Tampa (IP)	44 54	48 43	Berg (same as No. 1061).
1077	do	Lake Minnewanka	49 35		Encountered heavy drift ice.
1078	do	USCGC Duane	48 46	50 22	Radar targets.
1079	do	do	48 41	50 22	Do.
1080	do	Tampa (IP)	44 53	48 44	Berg (same as No. 1009).
1081	May 22	do	44 59	48 46	Berg.
1082	do	Beaverdell	46 57	52 13	Radar target, possible berg.
1083	do	Louisburg	47 55	52 52	Berg.
1084	do	do	47 57	52 59	Do.
1085	do	Tampa (IP)	44 56	48 37	Berg (same as No. 1009).
1086	do	USCGC Mackinac	48 36	50 15	Berg.
1087	do	do	48 19	50 46	2 Bergs.
1088	do	do	48 15	50 57	Berg.
1089	do	do	48 06	50 39	Do.
1090	do	do	48 20	50 36	Growler.
1091	do	do	48 29	50 12	Radar target.
1092	May 23	Ascania	47 45	50 48	Berg.
1093	do	do	48 01	50 28	Berg (same as No. 1089).
1094	do	Tampa (IP)	44 49	48 40	Berg (same as No. 1009).
1095	May 24	do	44 42	48 32	Do.
1096	do	Wanstead	47 48	47 56	Radar target, possible berg.
1097	do	do	47 40	49 26	2 growlers.
1098	do	MATS Aircraft	48 50	52 30	Berg.
1099	do	Tampa (IP)	44 35	48 33	Berg (same as No. 1009).
1100	do	Basis	48 26	52 46	2 growlers.
1101	do	do	48 24	52 46	Berg.
1102	do	do	48 21	52 41	Do.
1103	do	do	48 20	52 45	Growler.
1104	do	Manchester Port	48 02	50 19	Large berg.
1105	May 25	do	47 29	51 03	Radar target, probably berg.
1106	do	do	47 27	51 37	Do.
1107	do	do	47 17	51 39	Do.
1108	do	Tampa (IP)	44 27	48 21	Berg (same as No. 1009).
1109	do	Fanad Head	47 04	51 16	Large berg and growler.
1110	do	do	47 20	50 35	Small berg.
1111	do	Lord O'Neill	47 22	51 09	Large berg and growler.
1112	do	Tampa (IP)	44 27	48 42	Berg (same as No. 1009).
1113	do	Valacia	46 55	48 18	Small berg.
1114	do	Bauta	47 18	51 13	Berg (same as No. 1111).
1115	May 26	Tampa (IP)	44 19	48 29	Berg (same as No. 1009).
1116	do	Belray	47 17	50 38	Berg (same as No. 1110).
1117	do	Irish Pine	46 50	48 20	Berg and growler (same as No. 1113).
1118	do	Tampa (IP)	44 25	48 36	Growler (same as No. 1009).
1119	do	Samaria	47 16	49 07	Radar targets, possible bergs.
1120	do	do	47 16	48 55	Do.
1121	May 27	Tampa (IP)	44 25	48 32	Growler (same as No. 1009).
1122	do	do	44 27	48 33	Do.
1123	do	Empress of Canada	47 43	50 25	Growler.
1124	do	Pen Carrow	47 16	50 53	Do.
1125	May 28	Tampa (IP)	44 34	48 36	Growler (same as No. 1009).
1126	do	St. Tropez	47 55	52 35	Berg.
1127	do	do	47 00	52 55	2 small bergs and 2 growlers.
1128	do	do	47 05	52 17	Large berg.
1129	do	Grey County	46 55	51 18	Berg (same as No. 1109).
1130	do	Laurentia	47 13	51 33	Berg and growler (same as No. 1111).
1131	do	Wells City	47 29	50 47	2 bergs.
1132	do	Empress of France	46 40	52 42	Growler.
1133	May 29	Ice Patrol Plane	46 47	51 37	Berg (same as No. 1109).
1134	do	do	46 57	51 55	Berg (same as No. 1111).
1135	do	do	47 05	51 45	Berg.
1136	do	do	47 27	50 52	Berg (same as No. 1131).
1137	do	do	47 28	51 52	Berg.
1138	do	do	47 45	52 25	Berg (same as No. 1126).
1139	do	do	47 55	52 49	Berg.
1140	do	do	48 13	52 15	Do.

No.	Date	Name of vessel	North latitude	West longitude	Description
			° ′	° ′	
1141	May 29	Ice Patrol Plane	48 14	52 27	Berg.
1142	do	do	48 22	52 12	Do.
1143	do	do	48 23	51 40	Do.
1144	do	do	48 54	51 56	Do.
1145	do	do	46 29	52 49	Growler.
1146	do	do	46 42	51 45	Do.
1147	do	do	46 42	52 04	Do.
1148	do	do	46 54	51 29	Do.
1149	do	do	46 57	52 45	Do.
1150	do	do	48 43	51 55	Do.
1151	do	Empress of France	46 47	52 29	Do.
1152	do	do	46 49	52 18	Do.
1153	do	Laurentia	47 11	51 38	Berg and growler.
1154	do	do	46 53	52 12	Berg.
1155	do	do	46 48	52 22	2 small growlers.
1156	do	do	46 41	52 41	Large growler.
1157	do	Norwegian	46 53	51 28	Berg (same as No. 1111).
1158	do	Empress of France	47 28	50 45	Berg (same as No. 1131).
1159	do	do	47 08	51 44	Berg (same as No. 1135).
1160	do	Evergreen (IP)	48 56	52 00	Small berg (same as No. 1114).
1161	do	Trollafoss	47 52	51 26	Large berg 130 feet above water.
1162	do	Springtide	47 02	52 48	Growler.
1163	May 30	Ice Patrol Plane	46 12	51 51	Berg.
1164	do	do	46 38	49 20	Do.
1165	do	do	46 40	52 30	Berg (same as No. 1128).
1166	do	do	46 45	52 01	Berg.
1167	do	do	46 50	49 25	Do.
1168	do	do	46 07	51 42	Growler.
1169	do	do	46 25	52 55	Do.
1170	do	do	46 38	50 13	Do.
1171	do	do	46 38	52 22	Do.
1172	do	do	46 52	51 56	Do.
1173	do	Evergreen (IP)	From 20 miles southeast to 20 miles north of Cape Bonavista.		21 bergs and numerous growlers.
1174	do	Beaverburn	46 43	52 30	Small berg (same as No. 1135).
1175	do	do	47 02	51 58	Berg (same as No. 1111).
1176	do	do	47 23	50 47	Berg (same as No. 1131).
1177	do	Beaverglen	46 53	49 55	Growler.
1178	do	Evergreen (IP)	47 50	51 31	Small berg.
1179	do	Fort George	46 24	52 56	2 growlers.
1180	May 31	Ice Patrol Plane	46 42	49 52	Berg.
1181	do	Evergreen (IP)	46 55	52 10	Small berg (same as No. 1111).
1182	do	Runswick	46 38	51 48	Berg.
1183	do	do	46 43	51 40	Growler.
1184	do	do	46 32	52 32	Do.
1185	do	do	46 35	52 03	Do.
1186	do	Arthur Cross	47 48	52 43	Berg (same as No. 1139).
1187	do	do	47 47	52 54	Berg.
1188	do	do	47 38	52 39	Growler.
1189	do	do	47 36	52 53	Small berg.
1190	June 1	Ice Patrol Plane	46 29	49 01	Berg.
1191	do	do	47 03	50 51	Berg (same as No. 1131).
1192	do	do	47 31	51 39	Berg (same as No. 1161).
1193	do	do	47 41	52 39	Berg (same as No. 1139).
1194	do	do	47 42	52 20	Berg.
1195	do	do	47 45	52 56	Berg (same as No. 1157).
1196	do	do	47 47	52 40	Berg.
1197	do	do	47 48	52 32	Do.
1198	do	do	47 57	51 40	Berg (same as No. 1143).
1199	do	do	48 14	52 18	Berg.
1200	do	do	48 14	52 30	Do.
1201	do	do	48 21	53 08	Do.
1202	do	do	48 36	51 55	Do.
1203	do	do	48 40	52 52	Do.
1204	do	do	48 42	52 25	Do.
1205	do	do	48 45	52 58	Do.
1206	do	do	48 48	53 09	Do.
1207	do	do	48 48	53 14	Do.
1208	do	do	48 53	53 02	Do.
1209	do	do	48 55	53 03	Do.
1210	do	do	49 03	52 40	Do.
1211	do	do	47 15	52 25	Growler.
1212	do	Cairnesk	46 55	52 13	Berg (same as No. 1135).
1213	do	Tampa (IP)	46 26	48 52	Berg (same as No. 1164).
1214	June 2	do	46 21	48 53	Berg (same as No. 1164).
1215	do	Marengo	46 34	52 16	Radar contact, possible berg.
1216	do	do	46 42	52 23	Do.
1217	do	do	46 42	52 01	Do.
1218	do	do	46 54	51 55	Do.
1219	do	do	46 54	51 56	Do.
1220	do	do	46 48	51 47	Do.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
1221	June 2	Tampa (IP)	46	21	48	48	Berg (same as No. 1164).
1222	do	Manchester City	47	17	51	47	Berg (same as No. 1161).
1223	do	do	46	56	52	04	Berg (same as No. 1153).
1224	do	do	46	52	52	15	Berg.
1225	June 3	Dorelian	46	58	50	42	Berg and several growlers (same as No. 1131).
1226	do	Tampa (IP)	46	17	48	40	Berg (same as No. 1164).
1227	do	Cairnvalona	46	49	52	14	Berg (same as No. 1153).
1228	do	Tampa (IP)	46	19	48	37	Berg (same as No. 1164).
1229	do	Cairnvalona	46	48	52	24	Berg (same as No. 1224).
1230	June 4	MATS Aircraft	47	07	51	35	Berg (same as No. 1161).
1231	do	do	47	35	52	15	Berg (same as No. 1199).
1232	do	Empress of Scotland	47	17	51	33	Berg (same as No. 1161).
1233	do	Montreal City	47	14	50	46	Berg and growler.
1234	do	Tampa (IP)	46	19	48	30	Berg and growler (same as No. 1164).
1235	do	Blairspey	46	58	50	42	Berg (same as No. 1131).
1236	do	Hemsefjell	47	47	51	40	Radar target.
1237	June 5	USCGC Sorrel	47	24	52	36	Berg (same as No. 1139).
1238	do	Beaverbrae	47	09	50	22	Radar target, possible berg.
1239	June 6	Ice Patrol Plane	47	39	52	06	Berg.
1240	do	do	47	39	52	25	Do.
1241	do	do	47	46	52	26	Do.
1242	do	do	47	50	52	27	Do.
1243	do	do	47	52	52	45	Do.
1244	do	do	47	53	51	49	Do.
1245	do	do	48	08	52	43	Do.
1246	do	do	48	13	52	10	Do.
1247	do	do	48	13	52	26	Do.
1248	do	do	48	28	52	34	Do.
1249	do	do	48	46	50	56	Do.
1250	do	do	48	52	50	23	Do.
1251	do	do	48	56	52	00	Do.
1252	do	do	48	56	51	10	Do.
1253	do	do	48	57	52	20	Do.
1254	do	do	48	59	52	20	Do.
1255	do	do	49	00	51	14	Do.
1256	do	do	49	03	51	42	Do.
1257	do	do	49	08	52	13	Do.
1258	do	do	49	08	52	55	Do.
1259	do	do	49	12	52	13	Do.
1260	do	do	49	15	52	51	Do.
1261	do	do	49	26	51	40	Do.
1262	do	do	49	42	53	02	Do.
1263	do	do	49	46	52	20	Do.
1264	do	do	49	54	50	28	Do.
1265	do	do	49	55	51	45	Do.
1266	do	Beaverbrae	46	52	51	31	3 Radar contacts, probably icebergs.
1267	do	USCGC Sorrel	49	42	52	40	Berg (same as No. 1263).
1268	do	do	49	45	53	05	Berg (same as No. 1262).
1269	do	do	49	46	52	54	Growler.
1270	do	do	49	49	52	50	Do.
1271	do	do	47	51	52	36	Berg (same as No. 1241).
1272	do	do	47	53	52	34	Berg (same as No. 1243).
1273	do	do	47	54	52	27	Berg (same as No. 1242).
1274	do	do	48	07	52	42	Radar contact, probable berg.
1275	do	do	48	11	52	31	Do.
1276	do	do	48	29	52	45	Do.
1277	do	do	48	43	52	33	Do.
1278	do	do	48	45	52	43	Do.
1279	do	do	48	51	52	27	Do.
1280	do	do	49	03	52	57	Do.
1281	do	do	49	06	53	00	Do.
1282	do	do	49	10	52	31	Do.
1283	do	do	49	01	52	25	Do.
1284	do	do	48	55	52	28	Do.
1285	do	Beaverbrae	47	09	50	22	Radar contact, possible berg.
1286	do	USCGC Sorrel	49	58	53	07	Berg.
1287	do	Sibley Park	47	10	50	16	Small berg and growler (same as No. 1131).
1288	do	USCGC Unimak	46	37	50	53	Stationary radar target.
1289	do	Irish Cedar	47	17	50	09	Berg and numerous small growlers (same as No. 1131).
1290	do	USCGC Unimak	47	19	50	12	Berg and 10 growlers (same as No. 1131).
1291	do	Franconia	47	35	51	03	Large berg.
1292	do	do	47	11	51	24	Small berg (same as No. 1161).
1293	do	Beavercove	47	18	50	09	Berg (same as No. 1131).
1294	June 7	Ice Patrol Plane	47	32	51	00	Berg (same as No. 1291).
1295	do	do	47	38	52	22	Berg (same as No. 1240).
1296	do	do	47	42	52	15	Berg.
1297	do	do	47	43	51	58	Berg (same as No. 1239).
1298	do	do	47	50	52	28	Berg (same as No. 1242).
1299	do	do	47	58	51	48	Berg (same as No. 1244).

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
1300	June 7	Ice Patrol Plane	49	13	52	50	Berg (same as No. 1260).
1301	do	do	49	30	51	44	Berg (same as No. 1261).
1302	do	do	49	35	50	15	Berg.
1303	do	do	49	45	52	28	Berg (same as No. 1263).
1304	do	do	49	53	52	25	Berg.
1305	do	do	49	55	52	55	Berg (same as No. 1262).
1306	do	do	49	59	52	37	Berg.
1307	do	do	47	15	51	35	Growler.
1308	do	Carmelfjell	47	04	51	27	Larg berg (same as No. 1161).
1309	do	Wabana	47	19	52	40	Berg (same as No. 1139).
1310	do	Lismoria	47	31	51	06	Large berg (same as No. 1291).
1311	do	do	47	15	51	33	Small berg.
1312	do	do	47	10	51	13	Radar target.
1313	June 8	Ice Patrol Plane	47	35	51	00	Large berg (same as No. 1291).
1314	do	do	47	35	52	00	Berg (same as No. 1240).
1315	do	do	47	50	52	40	5 bergs.
1316	do	do	48	00	52	00	Berg (same as No. 1244).
1317	do	do	46	40	50	40	Growler.
1318	do	do	46	42	50	49	Do.
1319	do	do	47	10	50	20	Do.
1320	do	do	47	20	51	25	Do.
1321	do	do	47	30	50	00	Do.
1322	do	do	47	36	52	20	Do.
1323	do	do	47	47	52	10	Do.
1324	do	do	47	49	52	19	Do.
1325	do	St. Stephen	48	21	52	20	Radar target, presumed to be berg.
1326	do	do	48	19	52	08	Do.
1327	do	do	48	30	52	12	Do.
1328	do	do	48	58	52	07	Berg.
1329	do	do	49	00	52	00	Do.
1330	do	do	49	09	52	20	Do.
1331	do	do	49	10	52	00	Do.
1332	do	do	49	11	52	03	Do.
1333	do	do	49	11	52	03	Do.
1334	do	do	49	36	52	07	Do.
1335	do	do	49	43	52	33	Do.
1336	do	do	49	47	52	07	Do.
1337	do	Eucadia	47	35	50	57	Large berg (same as No. 1291).
1338	do	St. Tropez	47	46	52	26	Large berg.
1339	do	do	47	41	52	05	Large berg (same as No. 1239).
1340	do	Belgian Aircraft	49	15	53	25	7 bergs.
1341	do	do	49	25	51	50	Berg (same as No. 1334).
1342	do	do	49	15	51	50	2 bergs.
1343	do	do	49	05	51	50	Berg (same as No. 1330).
1344	June 9	Gander Oceanic Control	49	35	51	40	2 Large bergs.
1345	do	Beaverford	47	18	51	43	Berg.
1346	do	Themistokles	46	51	50	30	Pieces of ice 20 feet long and 4 to 5 feet high.
1347	June 10	CYQX (Radio Call)	48	55	51	10	Very large icebergs, others of large size within 20 miles radius.
1348	do	Laurentia	47	38	50	43	Large berg.
1349	do	do	47	38	50	56	Small berg (same as No. 1291).
1350	do	Manchester Port	47	25	50	55	Growler.
1351	do	do	47	30	50	40	Berg (same as No. 1348).
1352	do	USCGC Cook Inlet	49	49	52	03	Berg.
1353	do	do	49	43	51	58	Do.
1354	do	do	49	15	52	20	Do.
1355	do	do	49	20	51	54	Do.
1356	do	do	49	38	51	31	Radar contact, presumed to be berg.
1357	June 11	do	48	34	51	54	Do.
1358	do	do	48	17	51	56	Do.
1359	do	do	48	04	52	21	Berg.
1360	do	do	48	00	52	18	Do.
1361	do	Empress of Scotland	47	02	52	07	Radar targets, probably bergs.
1362	June 13	Ice Patrol Plane	47	32	52	30	Berg.
1363	do	do	47	35	52	22	Do.
1364	do	do	47	47	52	30	Do.
1365	do	do	47	48	50	31	Do.
1366	do	do	47	50	51	05	Do.
1367	do	do	47	50	51	30	Do.
1368	do	do	47	50	52	05	Do.
1369	do	do	47	55	51	47	Berg (same as No. 1244).
1370	do	do	48	00	51	03	Berg.
1371	do	do	48	00	51	30	Do.
1372	do	do	48	07	51	40	Do.
1373	do	do	48	10	52	40	Do.
1374	do	do	48	18	52	32	Do.
1375	do	do	48	22	52	17	Do.
1376	do	do	48	22	52	38	Do.
1377	do	do	48	27	52	01	Do.
1378	do	do	48	36	52	55	Do.
1379	do	do	48	44	53	04	Do.
1380	do	do	48	45	52	48	Do.
1381	do	do	48	47	53	00	Do.

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
1382	June 13	Ice Patrol Plane	48	48	53	06	Berg (same as No. 1206).
1383	do	do	48	49	52	51	Berg.
1384	do	do	48	49	53	03	Do.
1385	do	do	48	50	52	24	Do.
1386	do	do	48	52	52	04	Do.
1387	do	do	48	58	50	32	Do.
1388	do	do	49	00	50	35	Do.
1389	do	do	49	00	52	02	Do.
1390	do	do	49	04	53	08	Do.
1391	do	do	49	08	53	10	Berg (same as No. 1340).
1392	do	do	49	08	53	18	Do.
1393	do	do	49	08	53	27	Do.
1394	do	do	49	10	51	23	Berg.
1395	do	do	49	16	51	55	Do.
1396	do	do	49	20	52	00	Do.
1397	do	do	49	20	53	20	Berg (same as No. 1340).
1398	do	do	49	20	53	32	Do.
1399	do	do	49	21	53	10	Do.
1400	do	do	49	24	53	18	Do.
1401	do	do	49	26	53	05	Berg.
1402	do	do	49	28	51	25	Do.
1403	do	do	49	28	52	40	Do.
1404	do	do	49	32	53	18	Do.
1405	do	do	49	34	52	38	Do.
1406	do	do	49	40	50	42	Do.
1407	do	do	49	40	52	50	Do.
1408	do	do	49	57	51	28	Do.
1409	do	do	46	58	52	29	Growler.
1410	do	Asia	47	52	48	53	Small growler.
1411	do	do	47	36	50	34	Berg (same as No. 1291).
1412	do	Nova Scotia	47	53	51	53	Berg (same as No. 1244).
1413	do	do	47	40	52	28	Growler.
1414	do	do	47	53	52	12	Berg (same as No. 1368).
1415	do	PAA Aircraft	49	43	50	28	Very large berg (same as No. 1406).
1416	do	do	49	16	50	18	Large berg.
1417	do	do	49	54	51	22	Large berg (same as No. 1408).
1418	do	do	49	50	51	38	Berg.
1419	do	do	49	35	51	28	Berg (same as No. 1402).
1420	do	do	49	26	50	15	Berg.
1421	do	do	49	21	50	48	Large berg.
1422	do	do	48	55	50	15	Do.
1423	do	do	48	51	51	42	Berg.
1424	do	do	49	48	50	03	Do.
1425	do	do	49	42	52	22	Small berg.
1426	do	do	49	40	52	19	Do.
1427	June 14	Nova Scotia	48	29	50	12	Small radar target.
1428	do	Dutch Aircraft	49	10	51	20	2 large icebergs, several more bearing north and west.
1429	do	Exmouth	49	35	49	35	Considerable berg activity.
1430	do	Arabia	48	00	50	20	Berg.
1431	do	do	47	19	52	35	Berg (same as No. 1363).
1432	do	Torr Head	47	31	50	39	Large berg (same as No. 1348).
1433	do	do	47	20	51	23	Large berg.
1434	do	Valacia	47	20	50	39	Berg (same as No. 1348).
1435	June 15	Struan	47	59	51	03	Berg.
1436	do	do	48	04	51	22	Do.
1437	do	do	47	59	50	51	2 growlers.
1438	do	do	47	56	51	58	Berg (same as No. 1244).
1439	do	do	48	25	49	58	Large berg.
1440	do	Salacia	47	40	51	00	Radar target.
1441	do	Beaverburn	47	51	50	42	Large berg (same as No. 1371).
1442	June 16	Fernandes Lavrador	47	07	52	31	Berg (same as No. 1363).
1443	June 17	Empress of Canada	47	47	49	58	Radar target.
1444	do	do	47	49	50	24	Do.
1445	June 18	do	47	05	51	55	Do.
1446	do	Prins Willem Van Orange	47	52	47	42	Radar target, probably berg.
1447	do	USCGC Absecon	48	27	48	29	Do.
1448	June 19	Ice Patrol Plane	48	03	51	07	Berg.
1449	do	do	48	07	50	17	Do.
1450	do	do	48	09	52	19	Do.
1451	do	do	48	12	50	01	Do.
1452	do	do	48	36	52	08	Do.
1453	do	do	48	37	51	45	Do.
1454	do	do	48	45	49	40	Do.
1455	do	do	48	45	51	12	Do.
1456	do	do	48	49	51	51	Do.
1457	do	do	48	52	51	00	Do.
1458	do	do	49	12	52	33	Do.
1459	do	do	49	19	51	56	Do.
1460	do	do	49	28	52	29	Do.
1461	do	do	49	30	51	50	Do.
1462	do	do	49	31	52	12	Do.

No.	Date	Name of vessel	North latitude ° '	West longitude ° '	Description
1463	June 19	Ice Patrol Plane	49 38	49 50	Berg.
1464	do	do	49 38	50 08	Do.
1465	do	do	49 38	51 29	Do.
1466	do	do	49 40	52 28	Do.
1467	do	do	49 41	51 20	Do.
1468	do	do	49 48	52 12	Do.
1469	do	do	49 50	50 08	Do.
1470	do	do	49 50	51 31	Do.
1471	do	do	49 50	52 29	Do.
1472	do	do	49 51	51 16	Do.
1473	do	do	49 55	52 16	Do.
1474	do	do	48 45	49 20	Growler.
1475	do	do	48 53	49 22	Do.
1476	do	do	49 26	52 15	Do.
1477	do	do	49 38	50 15	Do.
1478	do	do	49 52	51 01	Do.
1479	do	Beaverbrae	47 04	50 47	Radar contact.
1480	do	USCGC Absecon	48 03	49 57	Stationary radar target, possibly berg.
1481	do	Belgian Aircraft	49 55	50 45	Berg 100 feet high, 100 yards long, 50 yards wide.
1482	do	USCGC Absecon	48 02	50 15	Berg (same as No. 1449).
1483	do	Empress of France	48 27	48 14	Radar target, possibly berg.
1484	do	KLM Aircraft	49 50	50 00	5 small bergs.
1485	June 20	Ice Patrol Plane	48 08	52 10	Berg.
1486	do	do	48 18	50 11	Do.
1487	do	do	48 28	47 56	Do.
1488	do	do	48 38	48 11	Do.
1489	do	do	48 41	51 39	Do.
1490	do	do	48 46	52 16	Do.
1491	do	do	48 47	51 28	Do.
1492	do	do	48 48	49 26	Berg (same as No. 1454).
1493	do	do	48 59	51 02	Berg.
1494	do	do	49 18	51 55	Do.
1495	do	do	49 40	51 20	Do.
1496	do	do	49 42	51 16	Do.
1497	do	do	49 46	49 59	Do.
1498	do	do	49 50	50 00	Do.
1499	do	do	49 55	50 14	Do.
1500	do	do	48 29	48 11	Growler.
1501	do	do	48 46	48 10	Do.
1502	do	do	49 00	49 21	2 growlers.
1503	do	Ascania	48 37	48 12	Large berg and several growlers (same as No. 1188).
1504	June 21	La Sierra	48 42	48 05	Large berg, numerous growlers (same as No. 1488).
1505	do	do	48 00	49 57	Berg (same as No. 1451).
1506	June 22	Seaboard Star	47 45	49 56	Do.
1507	do	Elysia	48 25	47 37	2 small bergs (same as No. 1488).
1508	do	do	48 25	47 51	Berg.
1509	do	do	48 15	47 52	Growler.
1510	do	Irish Cedar	48 24	48 03	Large berg and several growlers (same as No. 1508).
1511	June 23	Tidaholm	48 41	49 03	3 bergs.
1512	do	do	48 34	49 43	Large berg.
1513	do	do	48 13	49 52	Berg.
1514	June 25	Empire Gangway	46 35	55 57	Growler.
1515	do	Alisce	47 55	48 50	Berg and growler (same as No. 1513).
1516	June 26	Kristina Thorden	48 09	50 00	Berg 100 feet high.
1517	do	Hydro	48 38	52 30	3 bergs.
1518	do	Kristina Thorden	48 30	49 30	Large berg.
1519	do	Hydro	49 14	52 34	Growler.
1520	do	Lord Kelvin	49 58	50 01	Berg.
1521	do	do	49 53	49 56	Do.
1522	do	do	49 56	49 55	Do.
1523	June 27	Gripsholm	47 32	48 02	2 bergs (same as No. 1513).
1524	do	St. Malo	47 33	48 06	Large berg (same as No. 1513).
1525	do	do	48 31	48 12	Large berg.
1526	do	do	47 33 to 48 31	48 06 to 48 12	4 growlers.
1527	do	Cygnus	47 36	49 06	Large berg.
1528	do	do	47 44	48 58	Do.
1529	June 28	Salacia	47 42	49 08	Radar target, probably berg.
1530	do	Vandaval	47 58	48 57	Berg (same as No. 1518).
1531	do	do	47 52	48 55	Berg.
1532	do	Hydro	49 55	50 15	Do.
1533	do	do	49 14	49 58	Do.
1534	do	do	49 18	49 56	Do.
1535	do	do	49 28	49 53	Do.
1536	June 30	do	49 25	52 25	2 large bergs.
1537	July 1	do	49 53	49 45	Berg 1,500 feet long.
1538	do	PAA Aircraft	49 00	52 35	1 large and 1 small berg.

No.	Date	Name of vessel	North latitude °	′	West longitude °	′	Description
1539	July 1	Aircraft	49	22 to 30 miles northeast	53	40	8 bergs.
1540	do	Hydro	47	44	47	40	Berg.
1541	do	do	47	36	48	22	Berg and growler (same as No. 1528).
1542	July 2	Oris	48	54	49	00	2 bergs.
1543	July 3	Texas	49	55	49	06	Berg.
1544	do	Hydro	49	55	49	16	Berg and 3 growlers (same as No. 1543).
1545	do	do	49	54	49	31	Berg.
1546	do	do	48	53	50	32	Do.
1547	July 6	USCGC Mackinac	48	17	47	43	Large berg 160 feet high, 500 feet long. At least 12 growlers in vicinity to south for distance of 2 miles.
1548	do	American Counselor	48	18	47	36	Large berg with 11 growlers (same as No. 1547).
1549	July 7	MATS Aircraft	46	45	47	40	Large berg, 7 small pieces 8 miles southwest (same as No. 1528).
1550	July 10	Montedor	46	17	47	50	Large berg (same as No. 1528).
1551	July 11	PAA Aircraft	49	22	52	45	3 large bergs.
1552	July 12	do	49	10	52	20	2 large bergs.
1553	July 16	USCGC Evergreen	45	28	47	58	Berg 75 feet high and 250 feet long (same as No. 1528).
1554	do	USCG Air Detachment Argentia, Nfld.	45	28	47	58	Berg with 2 growlers nearby (same as No. 1528).
1555	do	USCGC Evergreen	45	27	47	57	Berg (same as No. 1528).
1556	do	Aircraft	49	00	52	00	Berg.
1557	July 17	USCGC Evergreen	45	27	47	51	Berg (same as No. 1528).
1558	July 18	do	45	18	47	34	Do.
1559	do	Veendam	45	22	47	35	Do.
1560	July 19	USCGC Evergreen	45	16	47	27	Do.
1561	July 20	do	45	15	47	18	Berg and numerous growlers (same as No. 1528).
1562	July 21	do	45	15	47	10	Small berg and numerous growlers (same as No. 1528).
1563	do	do	45	14	47	06	Berg (same as No. 1528).
1564	do	do	45	13	47	05	Small berg (same as No. 1528).
1565	July 22	do	45	08	46	56	Small berg, numerous growlers (same as No. 1528).
1566	do	do	45	08	46	51	Berg (same as No. 1528).
1567	do	do	45	07	46	52	Do.
1568	do	Hydro	48	32	51	05	Berg and growlers.
1569	July 23	USCGC Evegreen	44	58	46	34	Large growler (same as No. 1528).
1570	do	do	44	58	46	39	Do.
1571	do	Aircraft	46	14	54	17	3 bergs.
1572	do	Black Point	48	30	50	02	Berg.
1573	do	Gripsholm	48	45	50	30	Large berg.
1574	July 24	Oslofjord	48	24	50	02	Radar target, probably berg (same as No. 1572).
1575	do	Pankakoski	48	18	49	57	Large berg.
1576	do	Cape Race Radio	47	53	52	33	Berg.
1577	do	CYQX (Radio Call)	49	20	48	08	Berg 10 miles west and berg 30 miles east.
1578	July 25	Tidaholm	46	24	49	50	Large berg and 2 growlers.
1579	do	Cape Race Radio	48	17	49	44	Large berg 600 feet long, 135 feet high (same as No. 1575).
1580	do	Aircraft	48	30	51	00	Berg 10 miles west and berg 30 miles east.
1581	July 29	Akka	48	35	50	35	Large berg.
1582	do	Heelsum	47	50	47	47	Do.
1583	July 30	Cyrus Field	48	26	50	44	Berg and detached ice.
1584	Aug. 4	Naval Aircraft	46	10	48	15	Berg 50 feet high and 600 feet long and breaking up.
1585	Aug. 5	Fernandes Lavrador	46	38	47	38	Berg.
1586	Aug. 8	Naval Aircraft	45	21	49	10	Berg 40 feet high (same as 1584).
1587	do	Aircraft	49	30	53	35	Berg.
1588	Aug. 11	St. Marina	44	35	48	25	Berg (same as No. 1585).
1589	Aug. 12	USCGC Acushnet	44	08	48	57	Large berg (same as No. 1585).
1590	do	do	43	57	48	55	Do.
1591	do	Hydro	43	52	48	53	Berg (same as No. 1585).
1592	Aug. 13	USCGC Acushnet	43	47	48	53	Large berg 120 feet high, 350 feet long (same as No. 1585).
1593	do	do	43	48	48	48	Large berg (same as No. 1585).
1594	Aug. 14	do	43	48	48	51	Do.
1595	do	do	43	48	48	41	Do.
1596	Aug. 15	do	43	47	48	50	Do.
1597	do	do	43	48	48	45	Do.
1598	Aug. 16	Hydro	43	50	48	47	Berg (same as No. 1585).
1599	do	USCGC Acushnet	43	48	48	38	Do.
1600	Aug. 19	USCGC Cook Inlet	43	51	48	33	Berg 100 feet high, 300 feet long and growler 2 miles west (same as No. 1585).

TABLE OF ICE AND OBSTRUCTION REPORTS, SOUTH OF 50° N., 1950—Continued

No.	Date	Name of vessel	North latitude		West longitude		Description
			°	′	°	′	
1601	Aug. 20	USCGC Evergreen	43	47	48	40	Berg (same as No. 1585).
1602	do	do	43	50	48	57	Do.
1603	do	do	43	46	49	00	Do.
1604	Aug. 21	do	43	39	48	53	Do.
1605	Aug. 22	do	43	39	48	53	Small berg (same as No. 1585).
1606	do	do	43	38	49	12	Several growlers (same as No. 1585).
1607	Aug. 23	do	43	34	49	03	Growler (same as No. 1585).
1608	do	do	43	22	48	45	2 small growlers (same as No. 1585).
1609	Aug. 24	Aircraft	49	50	50	50	Large berg.
1610	do	do	49	20	52	10	Small berg.
1611	Sept. 17	do	48	18	49	59	Berg 400 feet high.
1612	Sept. 18	Oslofjord	48	43	49	03	Large berg and small berg.
1613	Sept. 25	Hydro	48	32	46	59	Berg.
1614	Oct. 18	do	49	21	53	00	Large berg.
1615	Oct. 19	Redbud	49	09	52	10	Do.
1616	Oct. 28	Hydro	48	10	50	17	Large berg, 115 feet high.
1617	Nov. 7	American Producer	47	35	49	53	Large berg.
1618	do	Genepesca	47	44	49	23	Berg.
1619	Nov. 12	Delphic	47	27	49	12	Berg 150 feet long, 75 wide, 50 feet high.
1620	Nov. 14	USCG Air Detachment, Argentia, Newfoundland.	47	25	49	20	Berg estimated 100 by 140 feet, height 15 feet (same as No. 1619).
1621	Nov. 17	Annunciada	47	17	48	32	Berg (same as No. 1619).
1622	Nov. 23	Sandsend	47	24	48	31	Do.
1623	do	Tekoa	47	22	48	14	Berg 70 by 40 by 25 feet (same as No. 1619).
1624	Nov. 24	Scythia	47	21	48	29	40 foot berg, 20 feet high and awash at times in heavy swell (same as No. 1619).

TABLE OF ICE AND OBSTRUCTION REPORTS, NORTH OF 50° N., 1950

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
Jan. 6	Katla	55 50	38 28	Berg.
9	USCGC Mendota	56 32	51 09	Do.
15	USCGC McCulloch	54 35	37 03	Do.
15	do	54 37	36 57	Do.
20	USCG Air Detachment, Argentia, Nfld.	Notre Dame Bay north to Battle Harbor.		Solid field ice.
26	USS Edisto	54 16	56 40	6 Small bergs.
Feb. 5	USCGC Humboldt	57 25	36 26	Large berg.
6	USCGC Matagorda	55 55	41 14	Do.
6	do	58 17 to 57 08	38 08 to 39 28	22 bergs and numerous growlers.
7	USS Redbud	63 10	52 00	Encountered pack ice.
10	do	63 10 to 63 30	52 20 to 52 20	Close pack ice.
12	Hamina	54 20	38 05	Berg.
14	Ocean Station Vessel B	56 38	50 40	Large berg.
15	St. Stephen	56 38	50 40	Do.
16	do	56 10	51 00	Berg.
18	do	52 12	41 09	Do.
18	Edvard Grieg	54 07	43 09	Large berg.
18	do	54 35	42 23	Do.
18	do	54 44	41 29	Small berg.
18	Trollafoss	52 12	41 49	Large berg.
20	Ranenfjord	53 07	39 50	Large berg and 2 growlers.
25	Aircraft	Strait of Belle Isle to 54 30	53 30	Field ice. Water spaces in ice irregular and scattered.
27	USCGC Castle Rock	54 38 thence west and south-southeast to limit of visibility.	54 15	Pack ice, 6 bergs in pack.
27	do	54 40	54 08	Berg and growler.
28	do	55 53	52 10	Berg.
Mar. 3	NOB Grondal	Arsuk Fjord		Scattered bergs.
5	do	Arsuk Fjord		Thin layer of ice.
5	do	Grondal Dock area		Do.
12	Ice Patrol Plane	50 15	51 40	Berg.
12	do	50 47	51 38	Do.
12	do	50 47	52 50	Do.
12	do	51 00	52 50	Do.
12	do	51 08	52 48	Do.
12	do	51 16	51 32	Do.
12	do	51 20	52 48	Do.
12	do	51 35	52 45	Do.
12	do	52 25	52 51	Do.
12	do	52 28	53 05	Do.
12	do	52 35	52 55	Do.
12	do	50 42	52 57	Growler.
12	do	50 00 to 53 00 and	51 00 to 53 00	Close pack ice.
21	USCGC McCulloch	56 37	50 42	Berg.
26	do	56 21	51 15	Small Bergs.
26	do	56 27	51 09	Do.
Apr. 4	NOB Grondal			Surface ice extends 10 miles down Tunugdliarfik Fjord from BW One estimated thickness 16 inches, considerable pack ice at seaward end. West Greenland pack ice extends along coast from Cape Farewell to Arsuk Fjord. Maximum width 90 miles. Clear channel immediately next to coast, width 3 to 5 miles.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
20	Ice Patrol Plane	49 55 to 50 20 to 51 00 to 51 10 to 51 07 to 50 42 to 51 10	52 50 52 45 52 30 52 32 53 07 53 35 53 30	Outer limits drift ice.
20	do	50 03	53 35	Berg.
20	do	50 04	52 52	Do.
20	do	50 15	52 57	Do.
20	do	50 25	53 05	Do.
20	do	50 26	52 55	Do.
20	do	50 35	52 48	Do.
20	do	50 38	52 40	Do.
20	do	50 40	53 14	Do.
20	do	50 44	53 08	Do.
20	do	50 45	53 10	Do.
20	do	50 47	52 10	Do.
20	do	50 47	52 57	Do.
20	do	50 48	53 16	Do.
20	do	50 50	52 35	Do.
20	do	50 50	53 14	Do.
20	do	50 54	52 40	Do.
20	do	50 54	53 12	Do.
20	do	50 55	52 40	Do.
20	do	51 03	52 42	Do.
20	do	51 04	52 40	Do.
20	do	51 04	52 44	Do.
20	do	51 05	52 47	Do.
20	do	51 05	53 04	Do.
20	do	51 06	53 15	Do.
20	do	51 10	53 30	Do.
20	USCG Air Detachment Argentia, Nfld.	51 58	53 41	33 large bergs within visibility radius.
21	Ice Patrol Plane	49 50 to 50 58 to 50 50 to 50 50 to 51 14 to 52 55 thence northward	52 40 52 38 54 00 54 22 53 10 53 05	Outer limits drift ice.
21	do	53 00 to 52 35 to 53 00 thence northward	52 40 52 10 51 55	Tongue of drift ice.
21	do	50 00 to 51 00 west of	 52 30	30-50 bergs within limits of ice pack.
21	do	51 00 to 53 00 west of	 53 20	Approximately 200 bergs in ice pack.
21	USS Edisto	61 12	45 24	Fast ice.
May 14	Hugo Nielsen	50 36	51 51	Growler and field ice extending 20 miles north to south.
14	Simiutac	------------	------------	20 large and 20 small bergs extending from BW3 to the horizon. Large area pack ice extending from BW3 to approximately 4 miles seaward. Fjord full of pack ice. 10 small scattered bergs in fjord. Small berg in BW3 harbor.
20	Ice Patrol Plane	50 00 to 51 00	52 40 53 00	Outer limits of drift ice.

Date	Name of vessel	North latitude (° ′)	West longitude (° ′)	Description
May 28	USS Mattabasset	52 22	51 00	Maneuvering through scattered fields of bergs and growlers.
31	----do	61 00	49 40	Few bergs in sight.
June 1	Norwegian Aircraft	51 25 to 50 55	50 30 to 51 17	Only a few smaller and scattered icebergs plus some medium size bergs off East Coast of Newfoundland.
1	Commander Fleet Bases, North Atlantic	60 14	50 28	Skirted edge of heavy ice to northwestward, encountered many bergs and growlers.
3	USS Redbud	51 28	51 44	Berg.
3	----do	51 20	51 43	Do.
3	----do	51 19	51 45	Do.
3	----do	51 15	51 47	Do.
3	----do	51 13	51 52	Do.
4	NOB Grondal	---------	---------	One large berg in fjord.
4	Scandanavian Aircraft	52 15	50 00	Scattered icebergs in 45 miles radius.
6	USCGC Sorrel	50 22	53 32	Berg 112 feet high.
6	----do	51 03	54 12	Entered southern limits drift ice, extends in east west line, horizon to horizon with at least 10 bergs in 5 mile radius.
6	----do	51 24	54 42	Drift ice variable concentration from 5 to 90 percent. Bergs too numerous to plot.
6	----do	51 25	55 00	Limit of drift ice northeast southwest. Only widely scattered bergs north of field.
7	Ice Patrol Plane	50 03	53 48	Berg.
7	----do	50 04	53 27	Do.
7	----do	50 04	53 47	Do.
7	----do	50 04	53 49	Do.
7	----do	50 08	53 42	Do.
7	----do	50 08	53 48	Do.
7	----do	50 08	53 50	Do.
7	----do	50 10	52 15	Do.
7	----do	50 11	51 59	Do.
7	----do	50 11	52 05	Do.
7	----do	50 14	51 05	Do.
7	----do	50 27	53 28	Do.
7	----do	50 35	51 47	Do.
7	----do	50 35	52 00	Do.
7	----do	50 50	51 25	Do.
7	----do	50 53	51 02	Do.
7	----do	50 54	51 30	Do.
7	----do	50 54	53 20	Do.
7	----do	55 55	51 45	Do.
7	----do	50 55	53 35	Do.
7	----do	51 00	51 02	Do.
7	----do	51 13	52 50	Do.
7	----do	51 15	51 51	Do.
7	----do	51 15	52 39	Do.
7	----do	51 16	52 55	Do.
7	----do	51 18	52 51	Do.
7	----do	51 19	51 32	Do.
7	----do	51 20	53 26	Do.
7	----do	51 24	51 27	Do.
7	----do	51 25	51 10	Do.
7	----do	51 26	50 37	Do.
7	----do	51 29	51 13	Do.
7	----do	51 29	52 54	Do.
7	----do	51 30	52 34	Do.
7	----do	51 32	52 36	Do.
7	----do	51 33	52 51	Do.
7	----do	51 34	51 09	Do.
7	----do	51 34	52 33	Do.
7	----do	51 36	52 45	Do.
7	----do	51 38	51 28	Do.
7	----do	51 38	53 48	Do.
7	----do	51 41	52 32	Do.
7	----do	51 45	52 30	Do.
7	----do	51 47	52 35	Do.
7	----do	51 48	52 44	Do.
7	----do	51 54	52 15	Do.
7	----do	51 55	53 10	Do.
7	----do	52 00	52 33	Do.
7	----do	52 03	51 54	Do.
7	----do	52 03	52 13	Do.
7	----do	52 04	52 33	Do.
7	----do	52 04	52 42	Do.
7	----do	52 07	52 56	Do.
7	----do	52 08	52 16	Do.
7	----do	52 08	52 31	Do.
7	----do	52 09	52 22	Do
7	----do	52 12	52 43	Do.
7	----do	52 13	51 46	Do.

Date	Name of vessel	North latitude		West longitude		Description
		°	′	°	′	
June 7	Ice Patrol Plane	52	13	52	38	Berg.
7	do	52	14	51	43	Do.
7	do	52	14	51	55	Do.
7	do	52	15	52	43	Do.
7	do	52	18	52	35	Do.
7	do	52	22	52	56	Do.
7	do	52	23	52	55	Do.
8	Lloydcrest	50	25	53	17	Large berg.
8	St. Stephen	50	04	52	20	Berg and growler.
8	do	50	10	52	07	Growler.
9	USCGC Sorrel	51	47	55	51	2 Bergs.
9	do	51	44	56	05	Berg.
10	USCGC Cook Inlet					Drift ice for 10 miles both sides of longitude 51–00W.
10	do	52	40	51	30	Berg.
10	do	52	30	51	44	Do.
10	do	52	27	51	34	Radar contact.
10	do	52	30	51	51	3 growlers.
10	do	52	27	51	55	Radar contact.
10	do	52	18	51	34	Do.
10	do	52	08	52	00	Berg.
10	do	52	04	51	41	Radar contact.
10	do	52	03	51	34	Do.
10	do	51	59	51	34	Berg.
10	do	51	56	51	50	Do.
10	do	51	49	52	00	Do.
10	do	51	50	52	08	Do.
10	do	51	34	52	15	Do.
10	do	51	31	52	10	Do.
10	do	51	25	52	12	Do.
10	do	51	22	52	00	Growler.
10	do	50	46	51	49	Berg.
11	Radio Grondal					One large berg in dock area.
13	Ice Patrol Plane	50	05	53	22	Berg.
13	do	50	08	53	22	Do.
13	do	50	15	53	02	Do.
13	do	50	18	53	12	Do.
13	do	50	20	50	22	Do.
13	do	50	20	53	00	Do.
13	do	50	35	51	55	Do.
13	do	50	37	50	22	Do.
13	do	50	40	51	20	Do.
13	do	50	45	51	15	Do.
13	do	50	47	51	10	Do.
13	do	50	54	52	50	Do.
13	do	50	57	51	00	Do.
13	do	51	00	53	25	Do.
13	do	51	06	53	44	Do.
13	do	51	08	51	45	Do.
13	do	51	08	53	42	Do.
13	do	51	10	53	20	Do.
13	do	51	10	53	40	Do.
13	do	51	13	50	55	Do.
13	do	51	15	51	00	Do.
13	do	51	15	53	18	Do.
13	do	51	17	53	30	Do.
13	do	51	18	49	54	Do.
13	do	51	25	49	05	Do.
13	do	51	27	53	10	Do.
13	do	51	30	53	05	Do.
13	do	51	32	53	12	Do.
13	do	51	35	50	30	Do.
13	do	51	40	52	35	Do.
13	do	51	50	50	10	Do.
13	do	51	50	50	15	Do.
13	do	51	50	50	50	Do.
13	do	51	50	50	55	Do.
13	do	52	00	50	52	Do.
13	do	52	00	50	55	Do.
13	do	52	00	51	00	Do.
13	do	52	00	51	45	Do.
13	do	52	10	51	45	Do.
13	Bassano	52	52	51	35	Extensive bits of ice comprising bergs, growlers and bergy bits extending north and south.
13	do	52	27	52	42	Exceptionally low lying berg, half to three-quarter mile wide. 1 small berg close to westward, 4 medium bergs 10 miles to northward.
13	PAA Aircraft	50	30	50	02	Very large berg.
13	do	50	15	50	02	Do.
14	KLM Aircraft	50	07	50	00	Widely scattered bergs.
17	Fernwood	51	50	50	35	2 radar targets, possible bergs.

Date	Name of vessel	North latitude ° ′	West longitude ° ′	Description
June 19	Ice Patrol Plane	50 02	51 54	Berg.
19	do	50 05	52 05	Do.
19	do	50 15	50 24	Do.
19	Vandalia	52 22	49 32	Do.
19	do	52 17	49 49	Do.
19	do	52 07	49 59	Do.
19	Blairspey	52 22	52 20	Do.
19	do	52 28	52 00	Small berg.
19	do	52 26	52 00	Growler.
19	do	52 32	51 40	Berg.
19	do	52 36	51 35	Do.
19	do	52 33	51 33	2 bergs.
19	Gunvor Marsk	50 01	52 31	Berg.
20	KLM Aircraft	51 35	49 00	Do.
21	Hydrographic Survey Group			Entire area and approaches thereto clear of ice. Hamilton Inlet, Porcupine Bay, Belle Isle Strait. Very few icebergs along coast of Labrador and in the vicinity of Belle Isle Strait.
22	KLM Aircraft	56 16	50 07	Bergs.
22	St. Stephen	52 36	51 38	Berg.
22	do	52 45	51 48	Do.
22	do	52 59	51 55	Do.
22	do	52 54	51 27	Do.
22	do	52 58	51 42	Do.
22	do	52 59	51 30	Do.
22	do	53 00	51 52	Do.
22	do	53 18	50 45	Do.
22	do	53 21	51 33	Do.
22	do	53 29	51 48	Do.
22	do	53 35	51 43	Do.
22	do	53 35	51 48	Do.
22	do	53 46	51 22	Do.
22	do	52 44	51 45	Growler.
22	do	53 44	51 51	Do.
23	Ornefjell	51 30	51 00	Do.
25	Belle Isle Radio	51 53	55 23	1 berg south of station.
26	ComHydroSurvGru, 2	51 29	56 35	Berg.
26	do	51 29	56 34	Do.
26	Hydro	51 27	56 37	3 growlers.
26	do	51 30	56 34	2 bergs.
26	do	51 34	56 42	Berg.
26	do	51 34	56 22	Do.
26	do	51 40	56 13	Large berg.
26	do	51 55	55 25	Do.
26	do	51 48	55 58	Do.
26	do	51 49	55 55	Growler
26	do	51 58	55 50	Berg.
26	do	51 38	56 30	Small berg.
26	do	51 48	55 58	Do.
26	do	52 01	55 36	Do.
26	do	51 39	56 14	Large berg.
26	do	52 00	55 41	Do.
26	do	51 59	55 35	Do.
26	do	51 55	55 31	Do.
26	do	51 49	55 26	Do.
26	do	52 00	55 21	Do.
26	do	52 01	55 22	Do.
26	do	52 05	55 19	Do.
26	do	52 04 to 51 55	54 42 to 55 34	6 bergs.
26	do	Northwest shore Belle Isle.		3 bergs.
26	do	North shore Belle Isle.		Do.
26	do	Northern entrance to Belle Isle Strait and north to 53° N. and east to 55° W.		Numerous large bergs.
26	do	52 12	55 28	3 bergs.
26	do	52 17	55 27	Berg.
26	do	52 19	55 15	Do.
26	do	52 22	55 18	Do.
26	do	52 23	55 24	Do.
26	do	52 35	55 34	Do.
26	do	52 30	55 31	Do.
26	do	52 24	55 17	Do.
26	do	52 22	52 21	Do.
26	do	52 35	55 26	Do.
26	do	52 35	52 29	Do
26	do	53 38	55 14	Do.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
June 26	Hydro	52 25 to 52 45 between	55 00 to 55 30	12 or more bergs.
27	do	52 50 to 53 25 and	55 40 to 55 08	Many bergs.
27	do	51 12	53 49	3 bergs and growlers.
27	do	51 20	57 54	Small berg.
27	do	51 21	57 57	Do.
27	do	51 40	56 30	Growler.
27	do	51 44	56 15	Do.
27	do	51 50	56 08	Do.
27	do	51 50	55 55	Do.
27	do	51 48	55 30	Do.
27	do	51 59	55 25	Do.
27	do	51 56	55 29	Growler and 6 bergs.
27	do	52 07	55 27	Berg.
27	do	51 51	56 08	Growler.
27	do	52 34	54 02	23 bergs and 15 growlers.
27	do	Belle Isle Strait to Hamilton Inlet, Labrador.		Many bergs and growlers encountered.
28	do	50 18	50 24	Berg.
30	do	51 47	55 56	Do.
30	do	51 46	56 14	Do.
30	do	51 42	56 10	Do.
30	do	51 42	56 20	Do.
30	do	51 38	56 19	Do.
30	do	51 38	56 22	Do.
30	do	51 27	56 37	Do.
30	do	Between Belle Isle and Labrador Coast.		12 bergs.
July 1	KLM Aircraft	50 48	50 10	Berg.
10	Hydro	54 03	56 30	Many bergs and growlers.
11	do	52 05	55 33	Large berg, numerous bergs north of Belle Isle off Labrador Coast.
11	do	51 43	56 00	1 large and 1 small berg.
15	LST 533	52 06	55 22	Large berg.
15	do	Belle Isle Strait		7 small bergs.
16	MATS Aircraft	54 50	47 55	Berg 200 feet high.
16	KLM Aircraft	51 22	51 11	Berg.
17	Aircraft	52 30	49 30	Large berg and 2 small ones.
18	Asia	52 09	53 23	Large berg.
19	Hydro	52 45	53 56	5 bergs within 6 mile radius.
19	do	52 03	55 29	Berg.
19	do	52 05	55 30	Do.
19	do	52 01	55 16	Do.
19	do	52 16	55 04	Do.
19	do	52 40	55 20	Do.
19	do	52 43	54 16	Do.
19	do	52 45	54 18	Do.
19	do	52 51	54 00	Do.
19	do	52 59	53 41	Do.
19	do	52 58	53 41	Do.
23	do	51 25	51 45	2 bergs.
24	USCGC Sorrel	Gulf of St. Lawrence.		No ice south of 51-30 N.
24	do	52 04	55 18	Berg.
24	do	52 14	55 20	Scattered bergs and growlers grounded along Labrador Coast.
24	do	51 47	56 05	Radar target, probably berg.
24	do	51 49	55 45	Do.
24	do	51 58	55 30	Do.
24	do	52 01	55 45	Do.
24	do	51 55	55 43	Radar target, probably growler.
29	Belle Isle Radio	52 28	52 17	Large berg.
29	do	53 27	52 30	Do.
29	do	52 10	55 30	Do.
29	do	52 12	55 30	Do.
29	do	51 40	56 17	Do.
29	do	51 43	56 18	Do.
29	do	51 43	56 21	Do.
29	do	51 53	54 55	Berg.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
July 29	Belle Isle Radio	52 58	55 30	Berg.
29	do	53 08	55 31	Do.
29	do	53 05	55 21	Do.
29	do	53 17	55 24	Do.
29	do	52 54	55 21	Do.
29	do	53 35	55 10	Do.
29	do	53 44	55 08	Do.
29	do	53 45	55 27	Do.
29	do	53 53	55 15	Do.
29	do	55 53	55 25	Do.
29	do	53 53	55 28	Do.
29	do	54 06	55 32	Do.
29	do	54 03	55 38	Do.
29	do	54 06	55 50	Do.
29	do	54 06	55 43	Do.
29	do	54 32	56 22	Do.
29	do	51 49	55 48	Do.
29	do	51 45	56 13	Do.
31	USCGC Evergreen	52 38	54 36	Large berg.
31	do	52 54	54 43	Do.
31	do	53 02	55 12	Do.
31	do	53 13	55 07	Do.
31	do	54 29	55 28	Do.
31	do	54 32	55 34	Do.
31	do	54 30	55 39	Do.
Aug. 1	do	54 34	53 21	2 bergs.
1	do	54 48	53 54	Approximately 15 bergs and numerous growlers in vicinity.
2	Hydro	52 37	51 35	Large radar target, probably berg.
3	CGLTS, Fredriksdahl, Greenland.	Fredriksdahl		Scattered bergs.
4	do	Fredriksdahl		Do.
8	Aircraft	52 00	50 00	Large berg.
8	do	52 35	51 00	Berg.
8	do	52 40	51 40	Do.
8	do	53 03	51 03	Do.
9	Hydro	52 47	55 15	Do.
9	do	52 38	55 29	Do.
9	do	52 47	55 29	Do.
9	do	52 29	55 07	Do.
9	do	52 03	54 54	Do.
9	do	52 04	54 58	Do.
9	do	52 05	55 07	Do.
13	do	51 37	51 20	Do.
13	do	51 41	50 40	Do.
13	do	51 55	50 56	Do.
13	do	51 41	51 08	Growler.
13	do	52 04	50 55	Large berg.
13	do	52 17	51 18	Radar contact, probably berg.
14	do	51 38	50 38	Berg.
14	do	51 35	50 38	Do.
14	do	51 36	51 02	Do.
14	do	52 09	51 00	Do.
14	do	52 11	50 44	Do.
14	do	52 13	50 50	Do.
14	do	52 12	50 59	Do.
14	do	52 15	51 19	Do.
14	do	52 10	51 26	Do.
14	do	52 12	51 50	Do.
14	do	52 50	51 55	Do.
14	do	52 56	52 00	Do.
14	do	53 17	51 43	Do.
20	PAA Aircraft	50 05	50 50	2 bergs.
20	do	50 50	49 08	Large berg.
20	Hydro	50 59	53 27	Berg.
20	do	52 36	55 01	Large berg.
20	do	52 35	55 12	Do.
20	do	52 49	55 05	Do.
20	do	52 52	55 08	Do.
20	do	52 53	55 00	Do.
20	do	52 56	55 11	Do.
20	do	52 56	55 24	Do.
20	do	52 57	55 04	Do.
20	do	52 57	55 17	Do.
20	do	53 59	55 17	Do.
20	do	53 04	55 06	Do.
20	do	53 01	55 19	Do.
20	do	53 05	54 50	Do.
20	do	53 06	55 12	Do.
20	do	53 07	55 08	Do.
20	do	52 10	55 05	Do.
20	do	53 25	55 30	Do.
23	KLM Aircraft	50 50	48 40	Large berg.

Date	Name of vessel	North latitude	West longitude	Description
		° ′	° ′	
Aug. 23	KLM Aircraft	50 10	50 00	Berg.
26	do	50 30	48 20	Large berg.
26	Hydro	52 20	51 30	Berg.
27	do	52 10	55 08	Do.
29	Naval Aircraft	51 03	48 10	2 large bergs.
30	Aircraft	52 00	50 30	Large rectangular berg.
30	Hydro	51 02	48 09	Berg.
30	do	51 01	48 02	Do.
31	Aircraft	50 55	48 05	Do.
31	do	51 10	47 55	Do.
31	PAA Aircraft	50 50	48 02	Do.
31	do	50 53	47 41	Do.
Sept. 3	KLM Aircraft	62 00	50 35	1 medium berg.
3	Aircraft	50 40	47 40	Large berg.
3	do	51 35	46 37	Berg.
4	do	51 20	48 20	Do.
5	ComEast Area	50 16	49 55	Do.
5	Aircraft	50 30	48 30	Large berg.
6	KLM Aircraft	50 48	48 20	3 medium bergs.
6	PAA Aircraft	50 40	48 10	3 large bergs.
7	KLM Aircraft	50 50	50 00	Large berg.
12	Aircraft	52 35	51 05	Large circular iceberg approximately ½ mile in diameter.
14	Naval Aircraft	53 14	51 41	3 bergs within 100 yards.
14	do	53 13	51 29	Berg.
16	Canberra	51 57	54 22	Do.
17	Hydro	51 49	54 16	Large berg.
Oct. 12	Bassano	52 25	53 35	Berg.
13	Amstelveen	59 45	43 55	Large berg and growlers.
15	Hydro	60 38	46 30	Large berg about 200 feet high and 4,500 feet wide.
15	do	60 38	46 35	Small berg about 60 feet high, 150 feet long.
16	USCGC Sorrel	60 48	48 53	Large flat top berg also a few bergy bits at entrance Arsuk Fjord.
17	do	60 36	46 28	Berg, also numerous bergy bits grounded on coast and in entrance to Skovfjord.
18	do	Skovfjord to vicinity Narsak		60 percent concentration bergy bits and brash with some new ice; scattered bits at entrance to Skovfjord.
18	do	60 36	46 28	Berg.
18	do	60 12	45 29	Do.
18	do	59 45	45 25	Do.
18	do	59 44	45 18	Do.
18	do	59 51	44 46	Do.
18	do	59 53	44 47	Do.
Nov. 25	Hydro	52 23	54 48	Do.
Dec. 1	USCGC Evergreen	Approaches to Frederiksdal		5 small bergs.
1	do	Frederiksdal Harbor.		4 small bergs.
6	do	Grondal to Frederiksdal.		Encountered many bergs.
7	do	Frederiksdal to 35 miles off shore.		Do.
16	Dettifoss	57 55	45 55	Berg.
16	do	57 51	44 30	Several bergs.
24	Aircraft	51 25	51 50	2 bergs.
28	USCG Air Detachment Argentia, Newfoundland.	Within 10 mile radius Battle Harbor.		Streaks of broken young ice.

PHYSICAL OCEANOGRAPHY OF THE GRAND BANKS REGION AND THE LABRADOR SEA IN 1950

By Floyd M. Soule [1]

The oceanographic vessel of the ice patrol during 1950 was again the 180-foot tender-class cutter *Evergreen*. Except for one very important change, the vessel and the arrangements for doing oceanographic work from it were much the same as in the two previous years and described in Bulletin No. 34 of this series. The change was the substitution of a five-bladed propeller for the three-bladed propeller formerly used. The hull-vibration was very much reduced, and with the new screw it was possible to run at about 2 knots higher speed with less vibration than before the change was made.

The season's oceanographic work began with the departure of the *Evergreen* from Argentia on 5 April for the purpose of making a current survey of the area over and immediately seaward of the southwestern, southern, and eastern slopes of the Grand Banks. Following a plan to begin the survey in the southwestern part of the area and work around the Tail of the Banks and thence northward along the eastern slope of the banks, the work of collection of data commenced at station 4000 located at 43°35′ N., 51°27′ W., on the afternoon of 6 April. Three stations had been occupied when it was necessary to discontinue oceanographic work to search for two fishermen in a dory which had become separated from its mother ship. After the missing fishermen had been picked up by another vessel, oceanographic work was resumed at station 4003 on the afternoon of 7 April.

Work progressed without major incident until the morning of 9 April, when at station 4011 increasing seas required interruption of the oceanographic work after the first cast had been retrieved. The ship was hove to until improving conditions permitted resumption of work at station 4012 13 hours later. Again, at 2031 on 17 April increasing wind and heavy seas made it necessary to heave to and await better weather. Work was resumed at station 4060, located at 45°02′ N., 46°35′ W., on the afternoon of 18 April, although with doubtful results because of excessive wire angles arising from a strong current whose direction was widely different from that of the wind (W6) and sea (SW4). A 4-minute square was run with the von Arx current meter shortly before leaving this station and the resulting value of about 2 knots checked with the drift experienced by the ship during the period hove to.

[1] Contribution No. 551 of the Woods Hole Oceanographic Institution.

The work of collection of data was completed, without further interruption, on the afternoon of 19 April, at station 4068, located at 46°20.5′ N., 48°55′ W., and the ship proceeded to contact the patrol vessel (*Tampa*). In the meantime the data collected were reduced to the form of a current chart. A copy of the current chart was passed to the *Tampa* on the afternoon of 20 April, after which the *Evergreen* proceeded to Argentia, arriving there on the evening of 21 April.

On 1 May the *Evergreen* departed Argentia to make a second current survey of the same general area covered by the first survey but eliminating the southwestern extreme and extending the charted area farther to the northeast. The work of collection of data began on the afternoon of 2 May at station 4069, located at 42°00′ N., 51°58′ W., and progressed without interruption until the afternoon of 6 May when, at station 4093, located at 42°41′ N., 46°58′ W., deteriorating weather contributed to the loss of some of the oceanographic equipment and then made it necessary to heave to from early evening until early morning on 7 May after which operations were resumed. No further interruptions occurred and the work of collection of data was completed early on the morning of 14 May at station 4144 located at 46°48′ N., 44°51′ W. From this position the *Evergreen* proceeded to 46°04′ N., 45°00′ W., where a carboy of water was collected for ultimate use as a substandard of salinity during subsequent cruises. In the meantime work continued on the reduction of the data collected at the 76 oceanographic stations to the form of a dynamic topographic chart, a copy of which was delivered to the patrol cutter (*Acushnet*) on the morning of 15 May. The *Evergreen* then proceeded to Argentia where she arrived on the afternoon of 16 May.

A third oceanographic cruise began with the departure of the *Evergreen* from Argentia on 26 May. This cruise was for the purpose of investigating the oceanographic conditions in the vicinity and immediately northward of the Grand Banks where the Labrador Current divides into a western branch which flows southward along the coast of the Avalon Peninsula of Newfoundland, and an eastern branch which continues southeastward and eventually southward along the eastern edge of the Grand Banks. The oceanographic stations planned were to be disposed as three sections forming the sides of a triangle with corners on the northern edge of the Grand Banks, just off Cape Bonavista, and in the deep water northeastward of the first two corners.

The work of collection of data began on the afternoon of 27 May at station 4145 located at the southern corner of the triangle and progressed counterclockwise around the triangle without interruption until the station at the corner off Cape Bonavista was completed at dusk on 29 May. Numerous icebergs and growlers could be seen

and more were reported to be along the proposed course. Fog patches and a fog bank also were visible in that direction and as the radar was not functioning reliably, a position off Cape Bonavista was maintained until daylight after which operations were resumed. The work of collection of data then progressed to completion on the evening of 30 May at station 4174 located near the beginning point of the triangle. A course was then laid for Argentia where the *Evergreen* arrived on the late afternoon of 31 May.

The *Evergreen* departed Argentia on the afternoon of 6 June to make a fourth current survey, with the area to be investigated including the waters over and immediately seaward of the southern and eastern slopes of the Grand Banks. It was also planned to extend section W (running southward from the southern end of the Grand Banks) sufficiently to cross the Labrador Current, the mixed water, and the Atlantic Current. The cruise began with an exploratory run southward along section W, during which surface currents were measured with a von Arx current meter and the thermal characteristics of the upper 200 to 300 meters were examined by means of casts of a bathythermograph every half hour.

The work of collection of the usual subsurface temperature and salinity data began on the morning of 9 June at station 4175 located at 38°00′ N., 50°12′ W., and continued northward along section W to the Grand Banks, after which the work progressed from the southwestern slope of the banks eastward around the Tail of The Banks and thence northward as far as and including section T. The final station of the survey, station 4238, located at 46°17′ N., 49°00′ W., was completed on the morning of 20 June. A course was then laid for Argentia with arrival there on 21 June.

The International Ice Patrol was discontinued for the season on 26 June for lack of ice in a position of potential hazard to effective shipping lanes. In order to avoid being barred by drift ice from the inshore area in the vicinity of Cape Farewell it seemed undesirable to begin the postseason oceanographic cruise until after 10 July. The work planned for this cruise included a reoccupation of the triangle of the third survey and a section across the Labrador Sea from South Wolf Island, Labrador, to Cape Farewell, Greenland. Accordingly, the *Evergreen* departed Battle Harbor, Labrador, on the evening of 11 July to begin the postseason cruise. The work of collection of data began on 13 July at station 4239 located at the offshore corner of the triangle and progressed in a counterclockwise direction around the triangle. Two sides had been completed when, in the early morning hours of 15 July, the *Evergreen* proceeded to the assistance of the steamship *Britamolene* which had gone aground in Trepassey Bay. A few hours later the *Britamolene* reported she had freed herself and was able to proceed unassisted toward St. John's whereupon *Evergreen*

returned to the triangle and resumed work on the third side shortly before noon on 15 July.

One additional oceanographic station had been completed when it was necessary to interrupt the oceanographic work to search for a berg or bergs which had been reported between 46° N., and 47° N., and between 47° W., and 48° W. A berg was located the following morning. A box search around the berg, combined with an air search conducted by a PBY-5A from the Coast Guard Air Detachment at Argentia indicated that only one berg was in the immediate vicinity. The *Evergreen* continued to stand by the berg until 23 July. By then it had decreased in size to a growler small enough so that it was no longer a hazard to navigation. Advantage was taken of the period during which the *Evergreen's* movements were restricted to the vicinity of the berg to run a series of current measurements with the von Arx current meter once an hour for 25 consecutive hours as an experiment looking toward the possibility of determining tidal surface currents in the open sea with this instrument.

The *Evergreen* proceeded to Argentia to refuel, arriving there on the night of 24 July and departing on the morning of 27 July to resume oceanographic work. Because of the considerable time interval since the work was interrupted on 15 July the work done prior to that time could not be considered synoptically with observations made nearly 2 weeks later. The compromise decided upon was to begin work at the southern corner and run the southeastern side and rerun the northern side. This work began on the morning of 28 July at station 4263 and was completed on the afternoon of 30 July at station 4282.

The first station of the section across the Labrador Sea was reached off South Wolf Island on the afternoon of 31 July. Work on the section progressed without interruption until the evening of 2 August when, in the vicinity of station 4297, wind, sea, and current conditions made it prudent to heave to to await more favorable conditions. By morning of 3 August, wind and sea were both from the north-northwest and had decreased to force 6 and 5 respectively and work at the oceanographic stations was resumed. The work of collection of data was completed on the morning of 5 August at station 4306, located at 59°42′ N., 44°15′ W., and the *Evergreen* proceeded to Woods Hole, Mass., by way of Cape Race. A carboy of sea water for use as a substandard of salinity was collected on the afternoon of 5 August.

Except for a brief diversion toward Halifax on the afternoon of 9 August, when a plane in the vicinity was having engine trouble, progress was not further interrupted and Woods Hole was reached on the morning of 11 August to complete the postseason cruise.

At the 24 stations comprising the section across the Labrador Sea, the observations extended from the surface to as near bottom as was practicable and the dynamic topography was referred to the 1,500-decibar surface. At the other 283 stations occupied during the season

and postseason cruises the observations extended to a depth of about 1,500 meters where the depth of water permitted and the dynamic topography was referred to the 1,000-decibar surface. An exception to the foregoing is that the 10 stations occupied in the southward extension of section W during the third survey extended to depths of about 2,500 meters to permit a better examination of the circulation past this section where the depth of the motionless surface is in the neighborhood of 2,000 meters. In general the intended depths of observation, in meters, were 0, 25, 50, 75, 100, 150, 200, 300, 400, 600, 800, 1,000 and thence by 500-meter intervals. Again the 10 stations in the southward extension of section W are an exception. At those stations the intended depths of observation were the same as given above from the surface to 1,000 meters, then 1,200, 1,600, 2,000, and 2,500 meters. Temperatures were measured with protected deep-sea reversing thermometers, most of them of Richter and Wiese manufacture but some of them by Negretti and Zambra and some by the GM Manufacturing Co. Depths of observation were based on Richter and Wiese unprotected thermometers. A program of intercomparison of thermometers was maintained by shifting the thermometers used in pairs. In all, 1,918 comparisons were considered. These gave a probable difference between the corrected readings of a pair of thermometers of 0.014° C. As most of the observed temperatures are the means of the corrected readings of such pairs, the probable error is of the order of ±0.01° C.

The collection, handling and salinity determination of water samples was the same as in previous years, with the accuracy of the salinities only that of the silver nitrate titration method used in calibration of the salinity bridge and the precision about ±0.005 ‰. The salinities have been tabulated to the nearest 0.01 ‰. No minor corrections to the salinities were required and except as noted in the discussion the dynamic topography shown in the figures is in accordance with the tabulated temperature and salinity data.

The oceanographic work was under the supervision of Oceanographer Floyd M. Soule who was assisted by Lt. Leroy A. Cheney. Other assistants in the observational work were Raymond W. Wood, boatswain's mate second class, Francis N. Brown, yeoman second class, Anthony J. Lamb, Jr., aerographer's mate third-class, Donald M. McGill, aerographer's mate third-class, and Hugh R. McCartney, Jr., aerographer's mate third-class.

Figure 16 shows the dynamic topographic chart of the sea surface resulting from the first survey. The Labrador Current is to be seen flowing southward along the eastern edge of the Grand Banks as far south as about latitude 44°15′ N., where it swings seaward to the 1,000-fathom curve before continuing along the contours of the banks as a slower but broader stream. The distribution of ice from sightings and reports during the period of this survey confirmed the

pattern shown in figure 16 and indicated that many of the bergs ended their southward progress in the vicinity of the 44th parallel, being assisted by prevailing southwesterly winds in crossing the dynamic isobaths eastward into the northward moving margins of the Atlantic Current and mixed water which dominated the southeasterly part of the surveyed area. The current chart was interpreted to mean that bergs continuing in the Labrador Current southward of the 44th parallel could, with favorable winds, cross seaward into the Gulf Stream system anywhere from longitude 49° W., to 53° W. Those following the dynamic isobath of about 970.98 were considered to represent the greatest threat to steamship traffic following the United States-European tracks of the North Atlantic Track Agreement. It was in this region south of the Tail of the Banks between about longitudes 49°30′ W., and 51°00′ W., that cold mixed water extended southward beyond the limits of the survey. While the possibility of bergs attaining extra southerly positions may have been greater prior to the period of this survey, it was considered that the threat could increase again with any waning or northeasterly shift of the salient of Atlantic Current water which during this survey was pointed toward approximately 45° N., 49° W.

The dynamic topographic chart resulting from the second survey is shown in figure 17. By comparison with figure 16 it will be noted that the area southward of the Grand Banks occupied by cold mixed water had decreased somewhat, probably through the blocking effect of the Atlantic Current salient. In each of these surveys this salient had the effect of reducing the volume of Labrador Current water reaching the Tail of the Banks and diverting some of this water eastward and northeasterly north of about the 45th parallel. Although the salient had degenerated somewhat at the time of the second survey it was still effective and the western boundary of northward moving water was closer to the banks at the surface than during the first survey. The eastward diversion of Labrador Current water by the salient is considered responsible for the formation of a Labrador Current salient which carried bergs to the area east-southeasterly of 45° N., 45° W., during early May. By the time of this second survey the Labrador Current salient had been somewhat reduced from its earlier maximum southeastward extension. It was considered, however, that this area could again become one of potential hazard to the United States-European Track Agreement tracks if the Labrador Current increased in volume of flow or if it maintained its volume and the Atlantic Current salient strengthened.

The dynamic topography found during the third survey of the Grand Banks region (fourth cruise) is shown in figure 18. Here Atlantic Current water was again pressing in toward the edge of the

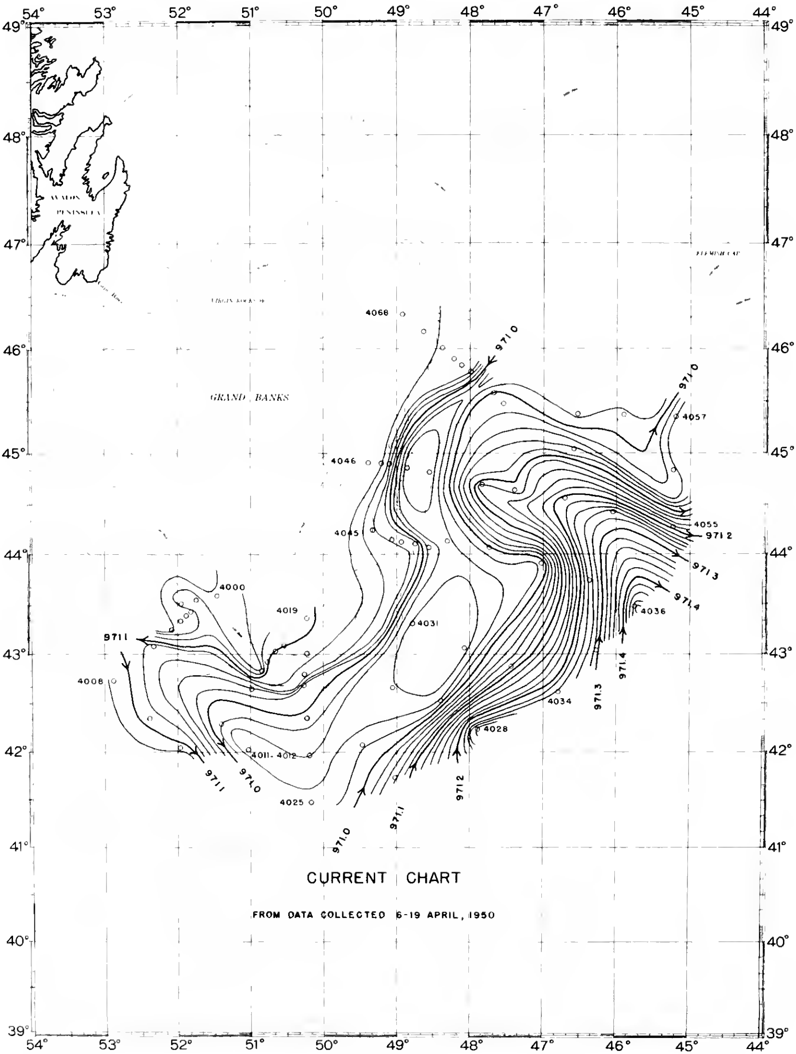

FIGURE 16.—Dynamic topography of the sea surface relative to the 1000-decibar surface from data collected 6-19 April 1950. Oceanographic station positions are indicated and the station numbers given at turning points.

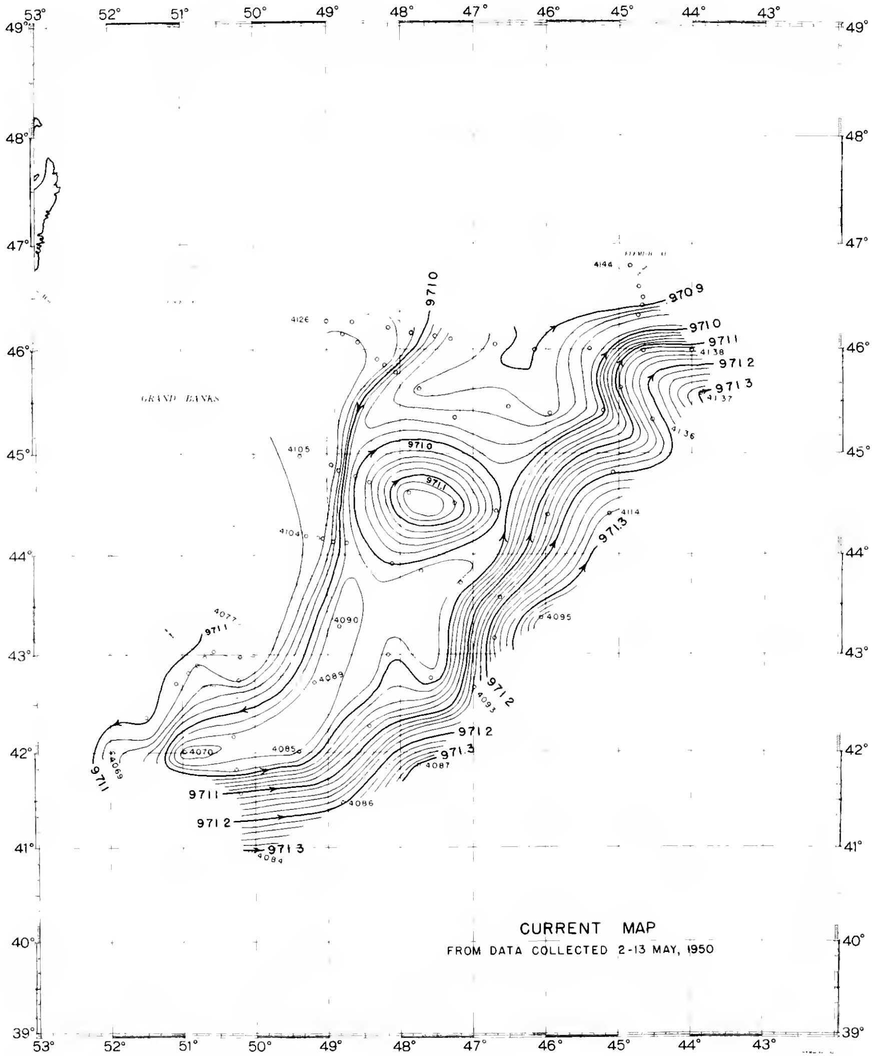

FIGURE 17.—Dynamic topography of the sea surface relative to the 1000-decibar surface from data collected 2-13 May 1950. Oceanographic station positions are indicated and the station numbers given at turning points.

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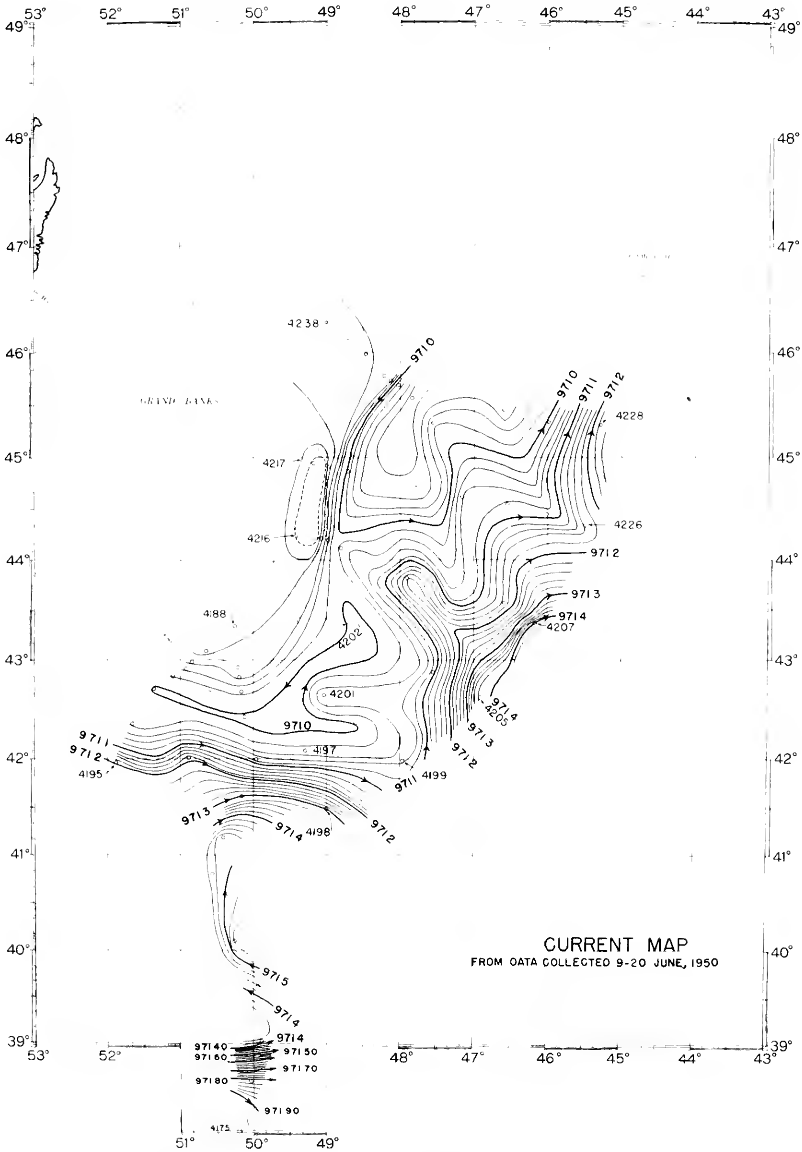

FIGURE 18.—Dynamic topography of the sea surface relative to the 1000-decibar surface from data collected 9-20 June 1950. Oceanographic station positions are indicated and the station numbers given at turning points.

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Grand Banks at about latitude 44° N., and reducing the amount of Labrador Current water south of that latitude. The Grand Banks eddy was present in this survey. The Labrador Current entered the northern part of the surveyed area in greater quantity than in the first two surveys and a major portion of it was diverted eastward north of about the 44th parallel. Probably the southward progress of the Labrador Current was even more completely blocked in the vicinity of 44° N., 49° W., than has been shown in figure 18. It is also probable that the dynamic topography is not as simple as that indicated and that a closed eddy existed in the vicinity of 45° N., 47° W., with the bulk of the Labrador Current water moving more directly eastward south of the eddy. The clue to these surmises is held in the characteristics of the subsurface water in this area where cold water with temperatures as low as −1.5° C was found at the unusually far eastward location of station 4225.

Section W, the north-south section near the 50th meridian, was extended south to the 38th parallel to get additional data on the complete Atlantic Current in this sector of the North Atlantic eddy. While it is known that the 1,000-decibar surface is not sufficiently deep for use as a motionless surface beneath the Atlantic Current, the dynamic heights of the surface at the stations comprising section W are referred to the 1,000-decibar surface here in order that the pattern of the general circulation in this part of the survey may be presented in the same illustration with the rest of the survey. Section W will be treated in greater detail in a later part of the discussion.

In earlier bulletins of this series the volume of flow, mean temperature and minimum observed temperature of the Labrador Current passing certain sections in the Grand Banks region have been reported upon. The location of these sections, T, U, and W are as follows: section T extending southeasterly from about 46°20′ N., 49°00′ W.; section U extending eastward across the eastern edge of the Grand Banks at about the 45th parallel; and section W extending southward across southern edge of the Grand Banks at about the 50th meridian.

Section T usually gives the total Labrador Current entering the area east of the Grand Banks and south of the 47th parallel and carrying all of the bergs which may endanger shipping following routes southward of and including track E. Section U usually gives this total Labrador Current plus a large part of the Grand Banks eddy minus any of the Labrador Current which has recurved northeastward between sections T and U. The loss of Labrador Current water recurving between these sections is ordinarily small so that the volume at section U is usually larger than that at section T. Section W is not as definitely characterized as the other sections since there is ordinarily a major loss of Labrador Current water through recurving and

mixing, and the westward flowing water at this section may include indeterminate amounts of the Grand Banks eddy and may be contributed to by mixed water recirculating in closed counterclockwise eddies between the remnants of the Labrador Current and the outer margins of the North Atlantic eddy.

Although there have been about 30 occupations of each of these sections beginning with the 1934 season, the great variations from year to year have made it difficult to derive any sort of normal seasonal variation. Provisional normals based on simple straight line relationships were determined in 1948 from plots of all data then available and are repeated here with volume of flow expressed in units of 1 million cubic meters per second and mean temperature expressed in degrees centigrade. The values apply at a date of 15 May, the middle of the 4-month season through which the rates of change are applicable.

	Volume of flow	Mean temperature
Section T	3.43 decreasing 0.67 per month	2.22 increasing 0.10 per month.
Section U	5.40 decreasing 0.56 per month	2.15 increasing 0.14 per month.
Section W	3.61 decreasing 0.26 per month	2.62 increasing 0.16 per month.

The measurements of volume of flow, mean temperature and minimum observed temperature resulting from all vailable occupations of these sections are presented in the following table.

In table 1 as well as in the following discussion, volume of flow is expressed in millions of cubic meters per second, and mean temperature and minimum observed temperature in degrees centigrade. The table shows the very considerable variations from year to year and the time gaps in the observations. It will be seen that a mean line drawn through plotted points of all observations for any section will overemphasize some years. For each section the greatest number of occupations covering the greatest number of years occurred during the month from 16 April to 15 May. Where a section was occupied more than once during the month in any one year the mean value resulting from such occupations was taken as the value for that year. Giving each year equal weight, means were then taken for each of the sections for the month 16 April to 15 May and plotted against the corresponding mean date as one point on the normal curves of volume of flow and mean temperature shown in figure 19.

Table 1

	16 Mar. to 15 Apr.			16 Apr. to 15 May			16 May to 15 June			16 June to 15 July		
	Volume	Mean temperature	Minimum temperature	Volume	Mean temperature	Minimum temperature	Volume	Mean temperature	Minimum temperature	Volume	Mean temperature	Minimum temperature
Section T:												
1934				1.8	1.53	−1.66	1.5	2.6	−1.72	1.5	3.3	−1.70
1935				2.1	1.67	−1.71						
				4.1	2.85	−1.56	2.71	2.06	−1.50			
1936	1.86	0.98	−0.75	3.23	1.83	−0.13	3.15	2.90	−1.47			
1937				3.53	1.83	−1.49	1.96	1.55	−1.22	1.88	2.19	−1.25
1938				6.70	4.26	−1.79	3.88	1.85	−1.67	4.30	1.74	−1.62
1939	5.71	2.12	−1.65	1.55	0.74	−1.68				2.62	1.44	−1.53
1940	3.70	2.47	−0.32	4.96	2.63	−0.19	3.52	2.24	−1.26			
							5.82	2.89	−0.55			
							3.83	2.80	−1.42			
1941	5.78	2.77	−0.65				3.31	3.13	−0.95	3.92	3.29	−0.73
1948							1.19	1.63	−1.48			
1949				3.40	1.55	−1.16						
				1.67	1.76	−1.24						
1950				1.38	−0.80	−1.77				3.20	1.48	−1.74
				2.79	0.28	−1.78						
Section U:												
1934				3.48	1.11	−1.37	3.11	1.56	−1.70	0.84	1.32	−1.65
1935	3.7	2.0	−1.66	5.92	0.98	−1.24	1.46	1.75	−1.28			
1936	7.20	2.31	−0.82	6.69	1.06	−0.94	3.90	3.11	−1.23			
1937	3.54	1.54	−1.29	5.80	1.90	−1.56	2.29	1.72	−1.29	3.02	1.81	−1.41
1938	5.62	2.16	−1.20	6.31	5.66	−0.71	5.11	3.80	−1.13	4.78	1.87	−1.64
1939	9.01	1.31	−1.51	7.15	1.60	−1.55				7.74	1.64	−1.61
1940	7.43	2.17	−0.21	3.31	2.25	−0.52	7.19	2.21	−0.71			
							6.88	3.01	−0.35			
							7.30	2.83	−0.62			
1941	6.99	2.54	−0.55				8.36	3.04	−0.60	8.62	3.52	−0.04
1948							3.47	2.31	−1.39			
1949				2.87	2.85	−1.31						
				2.19	1.75	−0.71						
1950	1.34	0.50	−1.76	1.50	1.46	−1.55				4.00	1.73	−1.60
Section W:												
1934				1.17	1.19	−1.15	1.63	1.07	−1.58	0.86	4.35	1.68
1935	1.08	2.72	−1.12				3.87	1.47	−1.02			
1936				3.13	2.61	0.02						
				8.78	2.85	0.08						
1937	0.54	0.66	−0.29	5.48	2.33	−0.99				3.40	2.53	−0.76
1938	5.14	3.78	−0.83	5.78	4.75	0.39	2.76	3.73	1.18	5.07	2.12	−1.59
1939	7.43	1.76	−1.59	3.81	1.59	−1.52	5.93	1.82	−1.62	2.26	1.82	1.19
1940	6.13	2.52	0.26	6.85	2.81	−0.03						
1941				1.31	3.11	0.15				4.78	3.34	0.39
				5.34	3.19	0.01						
1948	0.32	3.18	−0.15	0.41	5.25	−0.91						
1949	2.83	2.43	0.18				2.19	4.58	−0.64			
1950	4.25	1.71	−1.64	2.81	1.36	−1.45	2.58	4.69	0.69			

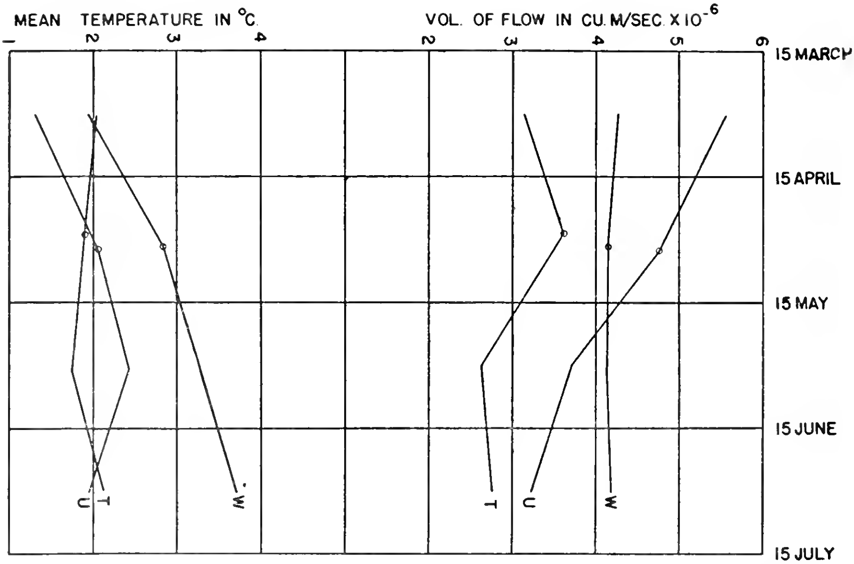

FIGURE 19.—Normal seasonal variation in volume of flow and mean temperature of the Labrador Current at sections T, U, and W. Curves are provisional and most reliable point on each curve is encircled.

The normal curves were then extended in each direction by mean monthly rates of change. Each year in which a section was occupied during two successive months gave a monthly rate of change for that month for that year. The mean monthly rates of change were determined by giving each year equal weight. It is considered that the normal curves thus derived are nearer the true normals than the 1948 normals for the month centered around 1 May and are equally as good for other parts of the season. Similar computations were made for minimum observed temperature but are not shown in figure 19 as a normal minimum observed temperature is considered of doubtful significance.

It is expected that additional data from future occupations of these sections will require changes in the normal curves given here but that the changes will be least in that part of the season near 1 May. Thus the computed normal values of volume of flow past sections T and U are as follows:

	1 Apr.	1 May	1 June	1 July
Section U	5. 58	4. 85	3. 70	3. 24
Section T	3. 12	3. 64	2. 70	2. 85
Difference	2. 46	1. 21	1. 00	0. 39

If the difference in volume of flow at sections T and U is taken as the volume of flow of the Grand Banks eddy we find a volume that is decreasing throughout the ice season. Such a conclusion would eliminate differential vernal warming of the shoaler water over the banks as a major driving force for the eddy. By itself this would be acceptable but the value of about 2.5 for the volume of flow on 1 April is suspiciously high since the approximately 25-mile stretch along section U from the usual location of the innermost station to the edge of the true Labrador Current, assuming a thickness of 100 meters, would need to have an average velocity of about 1 knot. The rate of change for 1 April to 1 May is based on 7 years for section U but is based on only 3 years for section T. It seems reasonable to conclude, therefore, that the 1 April normal for section T is larger than shown above. No safe conclusion can be drawn from the foregoing regarding the relative importance of differential vernal warming and other possible causes in maintaining the Grand Banks eddy.

From table 1 it will be seen that the Labrador Current was colder, both from the standpoint of mean temperature and minimum observed temperature, in 1950 than is usual. It will also be noted that its volume at sections T and U were subnormal during the first two surveys. This is attributed to the almost total absence of Irminger Current water found off Cape Farewell in the summer of 1949. In comparison with the normals shown in figure 19 the three surveys showed the following departures, plus signs indicating higher than normal and minus signs lower than normal:

	First survey		Second survey		Third survey	
	Volume	Mean temperature	Volume	Mean temperature	Volume	Mean temperature
Section T	−1.07	−2.70	−0.51	−1.50	+0.40	−0.46
Section U	−0.89	−1.15	−3.00	−0.66	+0.56	−0.39
Section W	+0.05	−0.53	−1.31	−1.46	−1.57	+1.31

Keeping in mind the composition of the apparent Labrador Current passing these sections in the Grand Banks region the results at section T are seen to indicate a progressive strengthening of the Labrador Current throughout the period covered by the three surveys. The decreasing negative temperature anomaly at that section seems to indicate that the strengthening current was the result of a restoration of the warmer off-shore component usually contributed by the West Greenland Current.

The circulation patterns shown in figures 16, 17, and 18 show the Grand Banks eddy to have been missing from section U during the first two surveys. In the first survey this was more than compensated

for by the presence of a vigorous recirculation of mixed water in a counterclockwise eddy between the Labrador Current and the margins of the North Atlantic Current. The larger deficiency at section U during the second survey was the result of the Atlantic Current salient turning back a considerable portion of the Labrador Current north of section U and reducing the amount of recirculating mixed water at both sections U and W. During the third survey the situation at section W was very little changed but section U contained more of the recirculating mixed water and was further augmented by the establishment of the Grand Banks eddy.

As in previous years the course of the outer boundary of North Atlantic Current water, based on a criterion of 34.95 ‰ salinity corresponding to a temperature of 6° C, was estimated for each of the three surveys. The area between the boundary and reference rhumb lines [2] was measured for each survey.

Adjustment of these areas was made by the subtraction of 10,000 square kilometers for each million cubic meters per second volume of flow past section U.

For the 8-year period 1934–41 a relationship, reported in Bulletin No. 31 of this series, was found to exist between the differential changes in sea level, Charleston-Bermuda, and the adjusted area in the Grand Banks region 13½ months later. From this relationship the adjusted areas predicted by tide gage readings in 1949 were computed and compared with the actual areas as follows (unit of area 10,000 square kilometers):

	Area	Adjusted area	Predicted adjusted area
First survey	6. 61	2. 28	4. 43
Second survey	5. 33	3. 83	2. 83
Third survey	6. 65	2. 65	−0. 45

The disagreement between the adjusted area and the predicted adjusted area for the first survey is not as bad as it would appear from the tabulated figures when it is remembered that the adjustment for the volume of flow at section U is intended to take into consideration the water of the Labrador Current and Grand Banks eddy entering the area from the north and that while the Grand Banks eddy was very small at the time of this survey a considerable volume of recirculating mixed water was included in the volume of flow past section U. If the volume of true Labrador Current water passing section U is taken as that at section T a Grand Banks eddy contribution to section U of 0.8 would be required to make the adjusted area equal to the predicted adjusted area.

[2] The 45th parallel from the boundary to 49° W., the 49th meridian thence to 43° N., and a rhumb line from 43° N., 49° W., through 42° N., 47° W., extended to the boundary.

The adjusted area and predicted adjusted area for the second survey differ by 1.0 which is probably close to the amount by which the Grand Banks eddy was below normal during this survey. The discrepancy existing during the third survey is not the result of an abnormal situation at section U and may possibly arise from the pronounced meander of the Atlantic Current to the right. If, as suggested by Haurwitz and Panofski,[3] such meanders are the results of unstable waves, the effect of very large meanders on the boundary in this area would not be forecast by the sea level differences along the Charleston-Bermuda section.

The temperature distribution found during the June survey along section W and its southward extension is shown in figure 20. The low temperatures over the shelf, which in this case is the Grand Banks, and adjacent to the slope identify the remnants of the Labrador Current and the mixed water respectively. Seaward of the mixed water, beginning at about station 4183, lies the eastward moving water of the North Atlantic eddy. The dip of the isotherms downward and to the right is indicative of the swift easterly current. In Ice Patrol parlance the cold wall is the steep horizontal temperature gradient at the sea surface which appears immediately to the right of station 4183. Some students of the Gulf Stream sector of the North Atlantic eddy define the cold wall as being indicated by the descent of the isotherm of 65° F (18.3° C) to a depth of 800 feet (244 meters) or more. Figure 20 shows this to have occurred between stations 4176 and 4177. Reference to figure 18 suggests an extensive meander of the Atlantic Current southward to the vicinity of latitude 39° N., and a subsequent return of at least a part of the current to a latitude greater than 41° N. It will be seen, therefore, that the temperature profile presented in figure 20 is not entirely a profile across the Atlantic Current but for a considerable part of its length is a section along the current. There is also evidence of another and probably smaller meander of the Atlantic Current to the right southeastward of station 4199.

Measurements made in 1937 in the area eastward of the Grand Banks have been interpreted [4] to indicate that the depth of the motionless surface beneath the Atlantic Current in this region is about 2,000 or 2,500 meters. The conclusion was based on considerations of patterns of flow, bottom temperatures, a volume transport balance, temperature-salinity correlations, and a deep water isentropic analysis. Using the *Meteor* results, Hidaka [5] computed the depth of the motionless surface in the Atlantic from 20° N. to 30° S., assuming

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[3] Haurwitz, B., and H. A. Panofski "Stability and Meandering of the Gulf Stream" Trans. Amer. Geophys. Union. vol. 31, No. 5, pp. 723-731 (October 1950) Washington.

[4] Soule, Floyd M., "Consideration of the depth of the motionless surface near the Grand Banks of Newfoundland," Jl. Marine Res. vol. 11, No. 3, pp. 169-180 (January 1940), New Haven.

[5] Hidaka, Koji, "Depth of motionless layer as inferred from the distribution of salinity in the ocean." Trans. Amer. Geophys. Union vol. 30, No. 3, pp. 346-348 (June 1949), Washington.

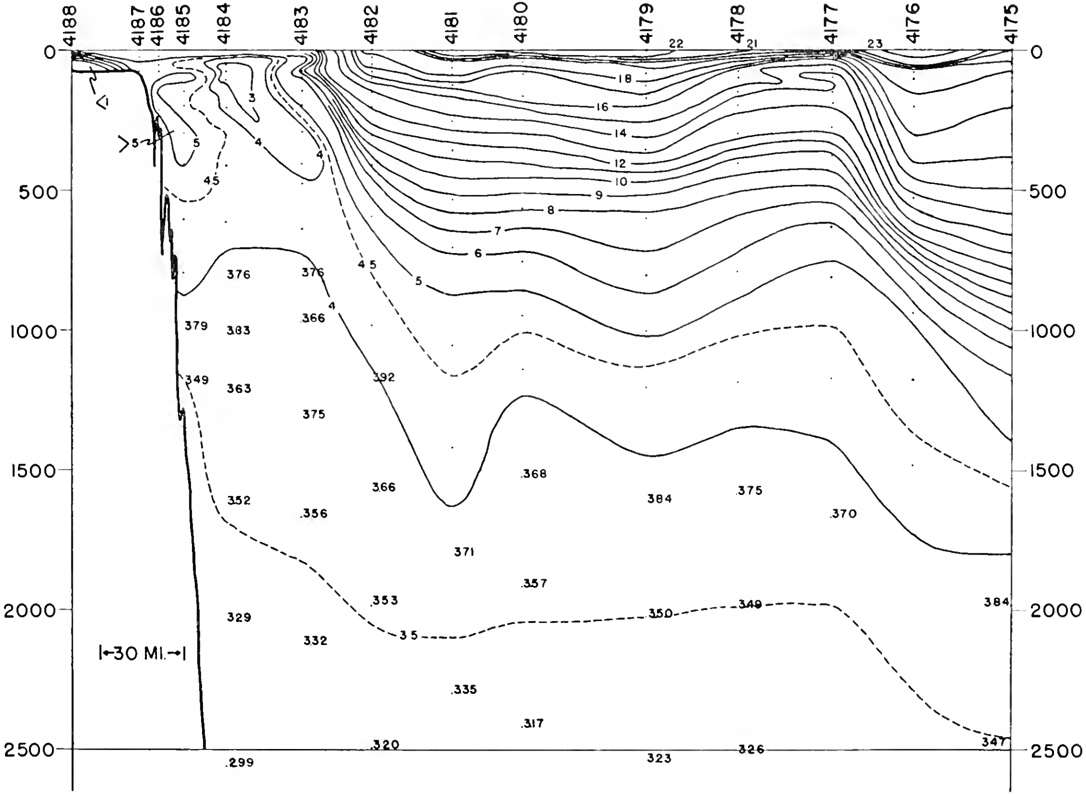

FIGURE 20.—Temperature distribution along section W extended to latitude 38° N., 9–12 June 1950.

that the actual distribution of salinity is the result of diffusion of salts in the water and that vertical mixing predominates over horizontal mixing, whence he deduced that the second derivative of salinity with respect to depth is equal to zero at the level of no motion. He concluded that in the area investigated the depth of the motionless surface varied between 900 and 1,400 meters, and that in the northern part of the area it was between 1,000 and 1,100 meters with indications that it sank to deeper levels north of 20° N.

Since the condition that the second derivative of salinity with respect to depth is equal to zero occurs at points of inflection on a vertical distribution curve of salinity, the curves for the stations taken eastward of the Grand Banks in 1937 were inspected for such points of inflection. However, in the levels which might reasonably be expected to contain a motionless surface, the salinity gradients are so small that the method is not sufficiently sensitive and usually more than one point of inflection was found.

From currents deduced from dead reckoning and ship positions from Loran fixes, von Arx and others have determined proportionality factors for the von Arx current meter when it is operated in the currents of the North Atlantic eddy. As the current meter indications are dependent on shear, or vertical gradient of velocity, the proportionality factors so derived can be used to deduce the depth to which appreciable shear extends and hence the depths of a motionless surface. Depths determined in this manner turn out to be somewhat in excess of 1,500 meters.

In consideration of the foregoing, 2,000 decibars has been selected as the reference surface for the construction of a velocity profile along section W which in the June survey was extended southward to latitude 38° N., and probably comes close to completely crossing the eastward flowing part of the North Atlantic eddy in this longitude. This profile is shown in figure 21. The section shows a volume of flow of 68.4 million cubic meters per second, a mean temperature of 13.39° C and a resulting heat transport of 915.7 million cubic meter °C per second eastward. While the section did not completely cross the eastward flowing water it seems very nearly to have done so and an estimate has been made that an additional 3.5 million cubic meters per second move eastward just south of the section shown in figure 21.

The temperature-salinity relationships of the water masses found in the Grand Banks region have been reported upon in earlier bulletins of this series. As might be expected, the Labrador Current water and the Atlantic Current water have been found to have the uniformity of T–S relationship characteristic of water masses. Usually the mixed water from these water masses has been distinguished by a degree of uniformity which has led to its consideration as a virtual water mass. Surface fluctuations produce departures from the characteristic

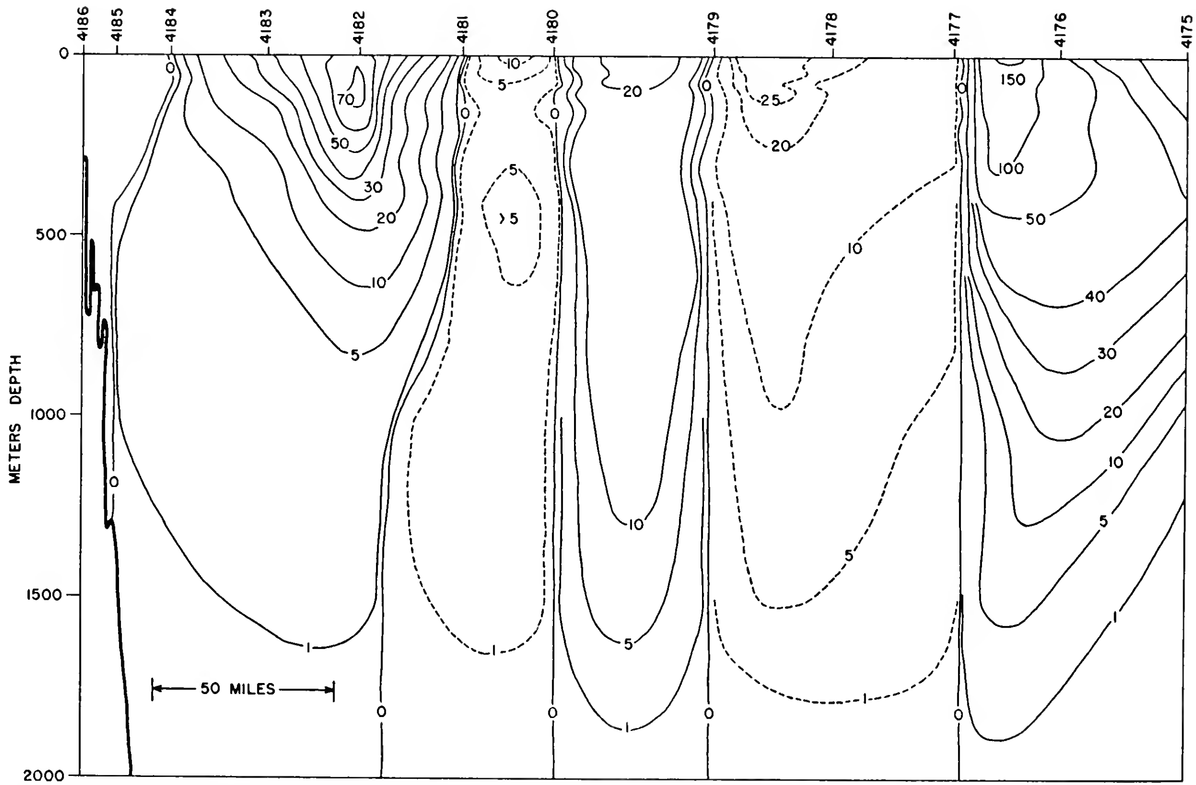

FIGURE 21.—Velocity distribution along section W extended to latitude 38° N., 9–12 June 1950. Easterly flow is shown by solid lines and westerly flow by broken lines. Dynamic heights have been referred to 2,000 decibars.

T-S curves in depths less than about 50 meters in the Labrador Current water, 75 meters in the mixed water, and somewhat deeper levels in the Atlantic Current water. In addition there are occasional stations where the upper levels of the station belong to one water mass and the lower levels to another water mass. However, the occasions when the measurements at a station have shown a mixture of water from the parent water masses in other than the proportions characteristic of the mixed water have been infrequent.

The most extensive series of measurements of this region covers the seasons of 1934 to 1941 inclusive. While this 8-year series does not qualify for the establishment of normals, mean values for the 8 years have been used for reference in the absence of better tentative normals. In figure 22 temperature-salinity relationships are given for the Labrador Current water, the Atlantic Current water, and the mixed water. The curves for 1950 are shown as solid lines and the 8-year means for the period 1934–41 are shown as broken lines. An inspection of the figure shows the curve for Labrador Current water to be displaced toward the cold side from the mean. The curve for mixed water is seen to be displaced toward the fresh side from the mean and the curve for Atlantic Current water seems to be rotated with respect to the mean, being displaced toward the salty side in upper levels and toward the fresh side at lower levels.

The deficiency in the West Greenland Current component of the Labrador Current and the almost total absence of Irminger Current water from the West Greenland Current at Cape Farewell in 1949 is considered to be an important source of the change in the Labrador Current. As the Labrador Current is an important contributor in the formation of the mixed water this cause was operative in bringing about the shift in characteristics of the mixed water. Other causes, however, must be sought for the changes in the Atlantic Current water.

Level for level, at all levels, the density of each of the three water masses was less in 1950 than for the 8-year mean. Neglecting the surface layers, the average decrease amounted to about 0.05 in σ_t from 100 to 1,000 meters in the Labrador Current water and the mixed water, and about 0.08 from 400 to 1,000 meters in the Atlantic Current water. We have here an illustration of the fact that as between temperature and salinity, the former is the controlling factor in the Atlantic Current whereas the latter is the controlling factor in the Labrador Current. Although the temperatures in the Labrador Current water were subnormal the decrease in salinities was great enough to produce a decrease in density at all levels. In the Atlantic Current water, while the salinities were higher than average in the upper layers the increased average temperatures produced a decrease in density at all levels. In the mixed water the temperatures were lower in the upper levels and higher in the lower levels than is usual; but the

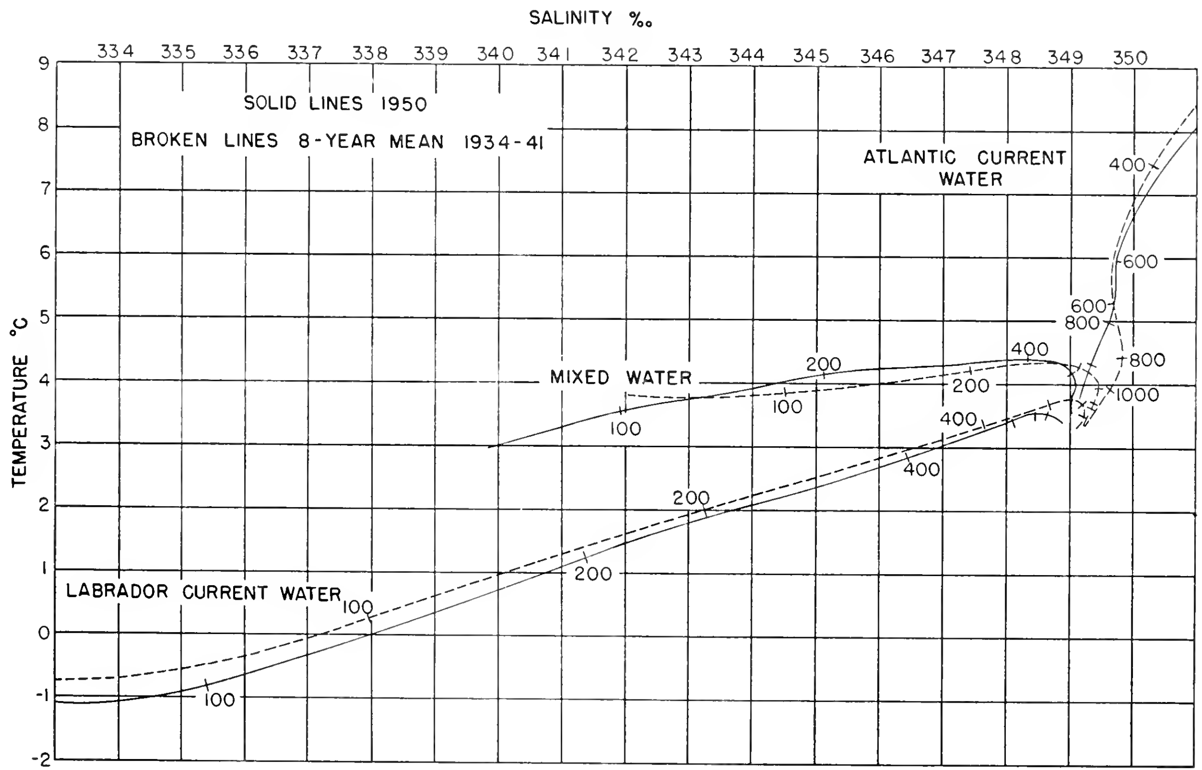

FIGURE 22.—Temperature-salinity correlations for Labrador Current water, Atlantic Current water, and mixed water found in the Grand Banks region. Solid lines show conditions during the 1950 season and broken lines represent the 8-year mean for the period 1934–41. An approximate depth scale in meters is given.

decreased salinities at all levels produced a decrease in density at all levels.

In the area just to the north of the Grand Banks the Labrador Current divides into a usually minor western branch which flows southward along the Avalon Peninsula and an eastern branch which is that part of the Labrador Current which follows the eastern slope of the Grand Banks. As opportunity permits, data are being collected which will teach us more about the behavior of the Labrador Current in the vicinity of this branch point. Three sections disposed to form the sides of a triangle which includes the branch point form the basis for such study as it has so far received. The triangle is defined by its corners which are located at Cape Bonavista, 49°23′N., 50°00′ W.; and 50°00′ N., 49°00′ W. Earlier surveys of the triangle were made once in 1948 and twice in 1949. In 1950 it was occupied once during the period 27–30 May and partially in the period 13–15 July when the northern and southwestern sections were occupied, and on 28–30 July when the southeastern and northern sections were occupied.

One of the questions which have been considered was whether the surface current pattern in the vicinity of the triangle is sufficiently representative of the currents in the upper 150 or 200 meters to permit the movement of a deep draft berg to be deduced from the dynamic topography of the surface. The measurements which have so far been made show a good similarity of pattern in these levels. Figures 23 and 24 show respectively the dynamic topography at the sea surface and at the 100-decibar surface relative to the 1000-decibar surface.

A second question of practical importance, and one which will require more study, deals with the rapidity with which the current pattern in this vicinity may change. Probably some change took place between the beginning and end of the survey on which figures 23 and 24 are based. The dynamic heights of all of the stations except those in the northeastern part of the triangle are referred to deep water by integration of the product of depth and anomaly of specific volume along bottom beneath the sections. In this case the dynamic heights of the shallow water stations may be arrived at by two approaches. Using these two approaches the dynamic heights do not agree and the triangle fails to close by about 52 dynamic millimeters when the vertical sections of anomaly of specific volume are reasonably constructed. One is faced by the choice of introducing extreme gradients of anomaly of specific volume which are not supported by the observed temperatures and salinities, or the assumption that changes took place during the survey. The latter has been chosen as the more probable.

Assuming that changes took place during the survey there is a further question as to whether the change was gradual enough to

cover the whole time of the survey or whether the change was much more rapid. Figure 23 has been constructed assuming a gradual change and the error in closure of the triangle distributed amongst the shallow water stations according to distance assuming the distance to be proportional to time. Figure 24 has been constructed assuming the change took place rapidly from one steady state to another and occurred between the occupation of stations 4147 and 4148. Thus the similarity in current pattern at the two levels is really better than indicated by the two figures.

The interval between stations 4147 and 4148 has been selected as that during which the rapid change took place, because of the unusual behavior of the von Arx current meter during this interval. It recorded very swift currents, banded but uniformly east-southeasterly in direction, with a maximum speed of the order of 5 knots. Using the recorded currents, the integral of the elemental products of current and distance between stations 4147 and 4148, expressed as an equivalent difference in dynamic height between the two stations, amounted to about 33 dynamic centimeters. It is evident from the magnitudes involved that, if the current meter were not in the midst of some aberration, we were not dealing with a steady state but with a transient condition which probably included a periodic movement (such as a tidal current) combined with a sizable change from one steady state to another. The transition between two steady states involves accelerations whereas the formulae developed from the Bjerknes circulation theorem deal only with steady states in which the accelerations are negligible.

It would seem from these measurements that changes in the current pattern do take place in this region and that significant changes in dynamic height may occur in an interval of less than 3 days and possibly in as short a time as a few hours. It is also suggested that very swift currents, such as were recorded by the von Arx current meter, may be produced locally in the readjustment which takes place in the change from one steady state to another. As to the possible causes of such a change, it has been noted that for several days prior to this survey the winds had been steadily from the northeast quadrant. More detailed comment would lead at once to pure conjecture.

Returning to the speculation that the change from one steady state to another steady state took place rapidly and most of it occurred between the occupation of stations 4147 and 4148, the dynamic height originally computed would then be valid for all stations except 4145 through 4147 and the dynamic topography would then indicate that nearly all the bergs passing Cape Bonavista would be carried into the eastern branch of the Labrador Current and only those passing the 49th parallel west of about 52°25′ W., would strand on the northern edge of the Grand Banks or follow the western branch along the Avalon Peninsula. The subsequent drift of late season bergs lends

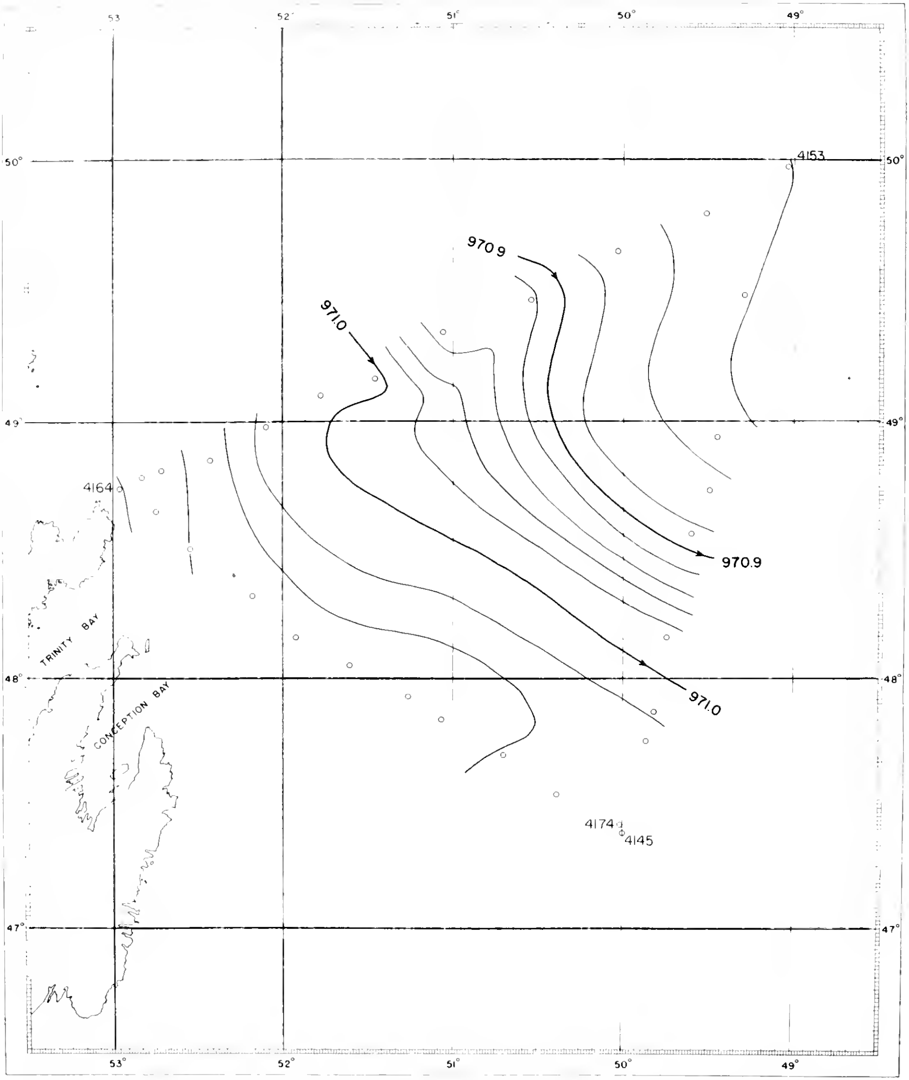

FIGURE 23.—Dynamic topography of the sea surface relative to the 1000-decibar surface, from data collected 27–30 May 1950. Oceanographic station positions are indicated and the station numbers given at turning points.

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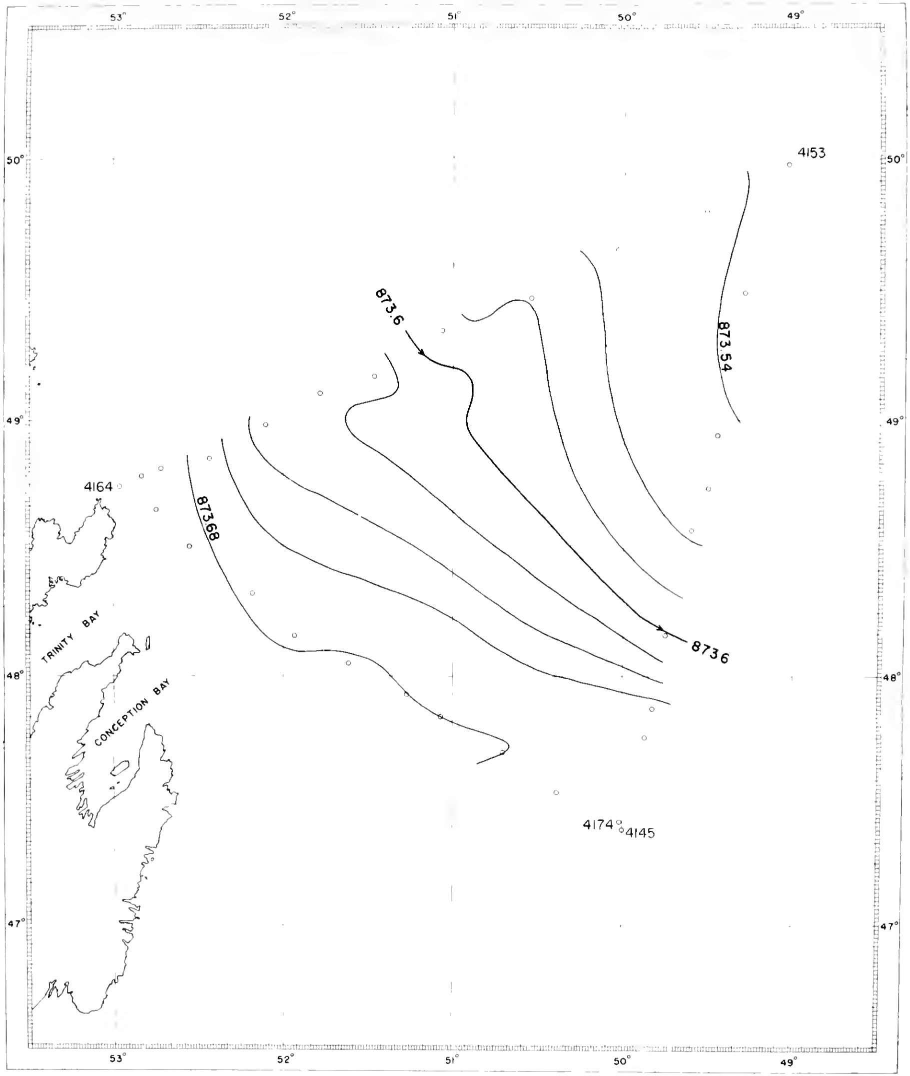

FIGURE 24.—Dynamic topography of the 100-decibar surface relative to the 1000-decibar surface, from data collected 27–30 May 1950. Oceanographic station positions are indicated and the station numbers given at turning points.

some support to this interpretation of the measurements made during the interval of 27–30 May.

Building further on this line of reasoning, the volume of flow of the total Labrador Current would be that passing the northern section of the triangle, 3.47; that of the western branch would be given by the southwestern section, 0.29; and that of the eastern branch would be given by the difference, 3.18. Thus, about 92 percent of the total would have been following the eastern branch.

In the partial occupation of the triangle during 13–15 July the volume of flow past the northern section was computed to be 2.79 after subtraction of an eddy of 0.42 at the offshore end of the section. The volume of flow past the southwestern section was computed to be 0.46 leaving 2.33 by difference as that part of Labrador Current in the eastern branch or 84 percent of the total. From the topography an estimate of doubtful accuracy is made that bergs passing the 49th parallel eastward of about 52°30′ W., would have followed the eastern branch and that those passing the 49th parallel westward of about 52°45′ W., would have followed the western branch, with those passing at intermediate longitudes stranding on the northern edge of the Grand Banks.

In the second partial occupation of the triangle during 28–30 July the inshore part of the northern section shows some northerly moving water possibly indicating an eddy at the mouth of Bonavista Bay. Apparently all of the Labrador Current passing the northern section also passes the southeastern section in the eastern branch with none of it feeding the western branch. The computed volumes of flow past the northern and southeastern sections were 3.11 and 3.26 respectively. While this is taken to mean that 100 percent of the Labrador Current reaching the triangle followed the eastern branch, there are some indications that inshore bergs getting south of the latitude of Cape Bonavista would have grounded on the northern edge of the Grand Banks.

In each of the two partial occupations of the triangle there are some areas of disagreement as to the direction of the surface currents as deduced from the dynamic topography and as indicated by the von Arx current meter. This is to be expected in an area where tidal currents are known to exist. Also, in each of these partial triangles the current pattern given by the dynamic topography at the 100-decibar surface is in general agreement with that at the sea surface. The experience gained in 1950 makes it plain that reliable conclusions regarding the behavior of the Labrador Current in the vicinity of this branch point cannot be based on the occupation of only two sides of the triangle.

The difference of only about 10 percent in the total Labrador Current reaching the triangle during the two partial occupations is not remarkable. The difference between this approximately 3 million

cubic meters per second and the much greater volume of flow found off South Wolf Island in early August, however, should be noted.

As mentioned previously, the interval of time separating the two partial occupations of the triangle was taken up by standing by a berg until it melted. A series of current measurements was undertaken in the immediate vicinity of the berg to determine, if possible, whether or not the von Arx current meter might have an application in the determination of tidal currents in the open ocean. As it was expected that any tidal current present would have its major component related in period to a lunar day, it was decided to make hourly current measurements for 25 consecutive hours. These measurements were begun at 1745 (45th meridian time) on 16 July at which time the berg was located at 45°27′ N., 47°57′ W., just inside the 1,000-fathom curve. The measurement scheduled for 2245 on 16 July was omitted to permit the greatest freedom in maneuvering the *Evergreen* because of the presence of other ships in the vicinity. The

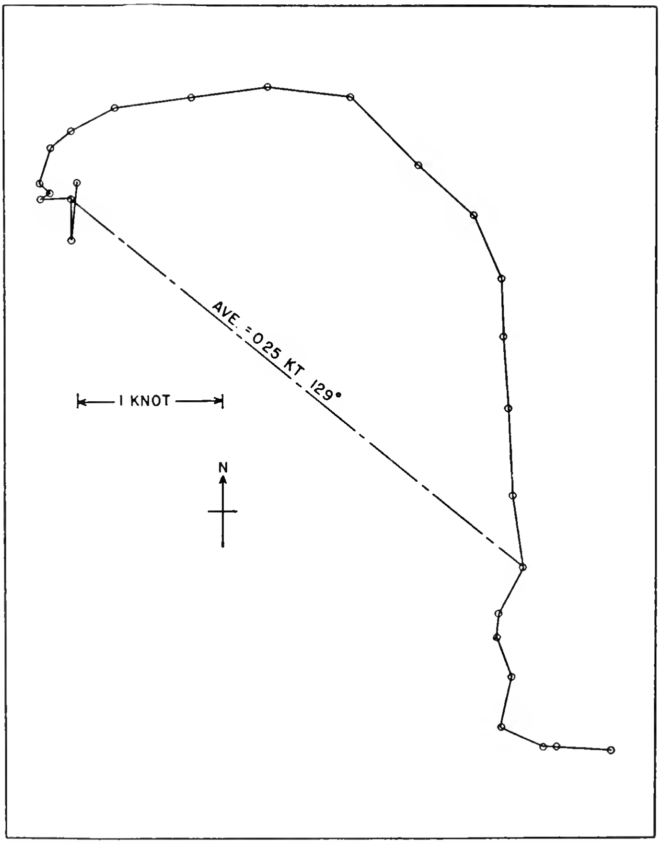

FIGURE 25.—Successive addition of velocity vectors measured hourly from 2315 on 16 July to 2345 on 17 July 1950. Average velocity has been taken for the 16-hour period beginning at 0145 on 17 July (45th meridian time has been used).

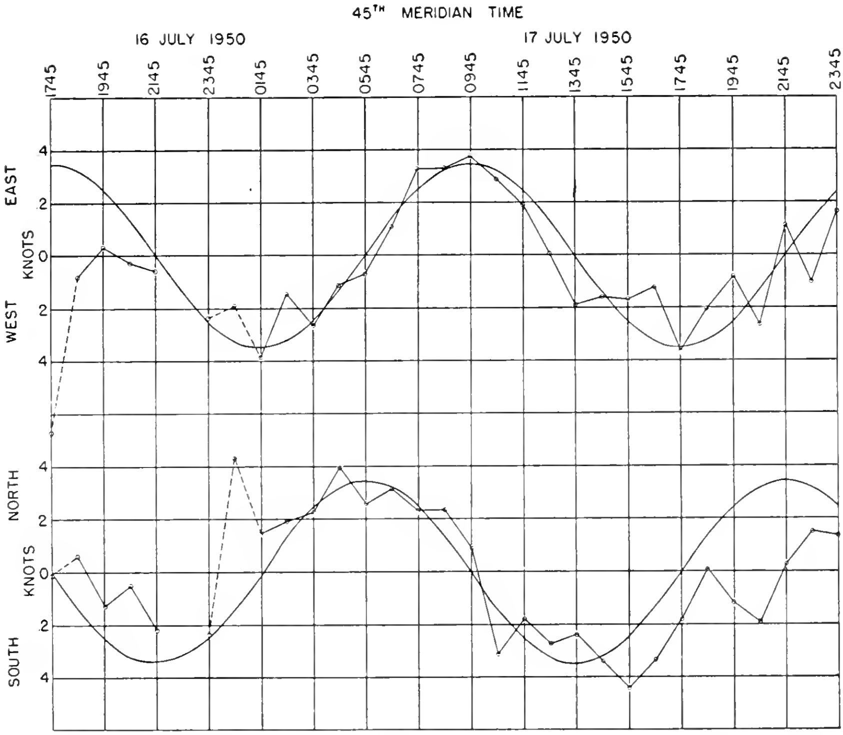

FIGURE 26.—East-west and north-south components of current vectors after elimination of average current of 0.25 knots 129°. Smooth curves, shown for comparison, are those representing a circular current of 0.35 knot amplitude and 16-hour period.

current measurements were resumed at 2345 and continued through 2345 on 17 July. The resulting series of 25 hourly velocities were then added vectorially and a first approximation of the average current determined graphically.

This average current vector was then subtracted from each of the individual current vectors to give the vectors representing the fluctuating currents. The fluctuating current vectors were then broken into their east-west and north-south components the magnitudes of which were then plotted against time. As this plot showed that the period of the principal constituent was of the order of 16 hours instead of 25 hours a new average current vector was determined using the 16 hours beginning with 0145 on 17 July. This point was selected to exclude the measurements of 1745 on 16 July and 0045 on 17 July which were considered doubtful since there were indications that the electrodes had not reached equilibrium with their surroundings at the time of the measurements. Figure 25 shows the vector sum of the hourly velocities from 2345 on 16 July to 2345 on 17 July and the determination of the average current for the 16 hours begin-

ning at 0145 on 17 July. The rectangular components of the fluctuating currents were again determined, this time for all observations, and are shown by small circles in figure 26.

It would seem from figure 26 that the surface current did have a fluctuating component that was about one-third of a knot, approximately circular and had a period of about 16 hours. The difference between 16 lunar hours and 16 solar hours (about 32 minutes) is too small to distinguish in this series of observations considering their short duration, scatter of the plotted points, and the fact that individual measurements are not considered to be better than 0.05 knot. If the periodic current is tidal one should expect to find its constituents related to the constituents of the tides in period, although not necessarily following the same ratio of amplitudes. Amongst the many tidal constituents considered by the United States Coast and Geodetic Survey [6] in predicting tides one which is well down the list in importance as a tidal constituent, the M_3 tide, is related to periods of 8 lunar hours and might conceivably form the basis of this observed current period of 16 hours. The connection seems unsatisfactorily remote. For the convenience of those who may wish to use these data in connection with other studies of tidal currents it is noted here that a new moon occurred on 15 July and that the local civil time of its upper transit on 17 July was 1412.

It has been suggested that the periodic current may be an inertia current with its period that of a half pendulum day. For latitude 45°27′ the half pendulum day would amount to 16.84 hours. This would be close enough to be indistinguishable from the observed period.

A rough check on the surface currents as measured by the current meter is possible by comparison with the positions of the berg if it is assumed that the berg's motion was the same as the surface current. These positions were determined by celestial or Loran methods or combinations of the two as available. Beginning at the position for 1745 on 16 July the berg was 2.1 miles 105° from the position projected by the current measurements at 0800 on 17 July. Interpolating between the positions for 0800 on 17 July and 0800 on 18 July, the berg was 7.5 miles 108° from the position projected by the current measurements at the end of the series of measurements at 2345 on 17 July. After 0930 on 22 July the berg was reported as a growler and because of its shallow draft might have been more directly affected by wind after that time. Between 1745 on 16 July and 0930 on 22 July the drift of the berg averaged 0.37 knot in a direction 114° whereas the average current deduced from the current meter observations was 0.25 knot 129°. This left a berg movement, unaccounted for by the surface current, of 0.14 knot 087°. This may be regarded as being made up of the discrepancy between the surface current and the average current

[6] Schureman, Paul, "Manual of harmonic analysis and prediction of tides." U. S. Coast and Geodetic Survey Special Pub. No. 98, 1940 edition (1941), Washington.

from the surface to the draft of the berg, and the direct wind effect on the berg. (Winds were light and principally from the southwest quadrant.)

One of the proposed uses of the von Arx current meter is the location of a berg by the patrol cutter by searching down stream as indicated by the current meter when the search can begin at a reported previous position of the berg within a few days of the report. If rotary currents are present in the area the "down stream" indication of the current meter will not be in the direction of the average current. If the amplitude of the rotary current is small in comparison with the average current the search path will approximate a direct approach to the berg along a geostrophic current line. However, as the amplitude of the rotary current approaches the magnitude of the average current the search path will become less direct and will be cycloidal in the limiting case where the amplitude of the rotary current equals the magnitude of the average current. With proportionately greater rotary currents the search method becomes inefficient and would break down but for the practical consideration that it is expected that the amplitudes of actual rotary currents are small and if the average current is less than the rotary current the berg will not have moved far from its reported position.

The temperature distribution along the vertical section from South Wolf Island, Labrador, to Cape Farewell, Greenland, found during the postseason cruise is shown in figure 27. At the left-hand side of the figure the frigid inshore part of the Labrador Current with its characteristic temperature minimum is to be seen over the shelf. The warmer offshore part of the Labrador Current extends farther seaward of the slope than is usual. The tongue of warmer water which extends to bottom beneath the Labrador Current at the edge of the shelf is shown between the isotherms of 3.8° C and reached maximum values of about 3.9°. This is regarded as a return to normal from the colder temperatures of 1949. On the Greenland side the temperature maximum usually associated with the Irminger Current component of the West Greenland current, while nearly 1° warmer than in 1949, was still subnormal and less than 6° C. The temperature minimum which is characteristic of the intermediate water of the Labrador Sea in summer is seen to have been present in its characteristic shape and extent and to have returned to the temperatures found so consistently during the summers of 1934–39. The minimum of about 3.17° C found during those years and in 1950 is about 0.15° colder than in 1949.

The salinity distribution found in the northeastern half of this section is shown in figure 28. In 1949 the Irminger Current component of the West Greenland current was almost completely absent. The salinity maximum associated with this water is normally about 35.04‰ and, until 1949, had been remarkably constant. In 1949 the maximum dropped to 34.97‰ and in 1950 it was very nearly as

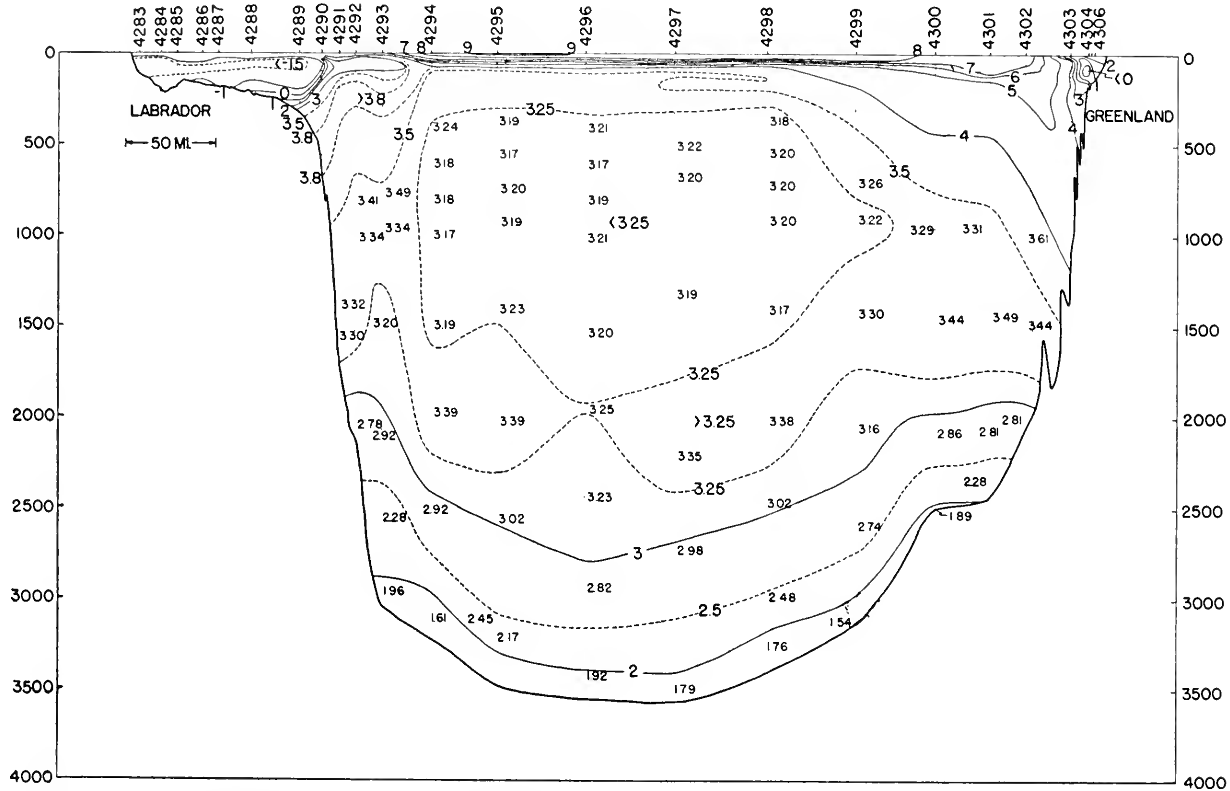

FIGURE 27.—Temperature distribution between South Wolf Island, Labrador, and Cape Farewell, Greenland, 31 July–5 August 1950.

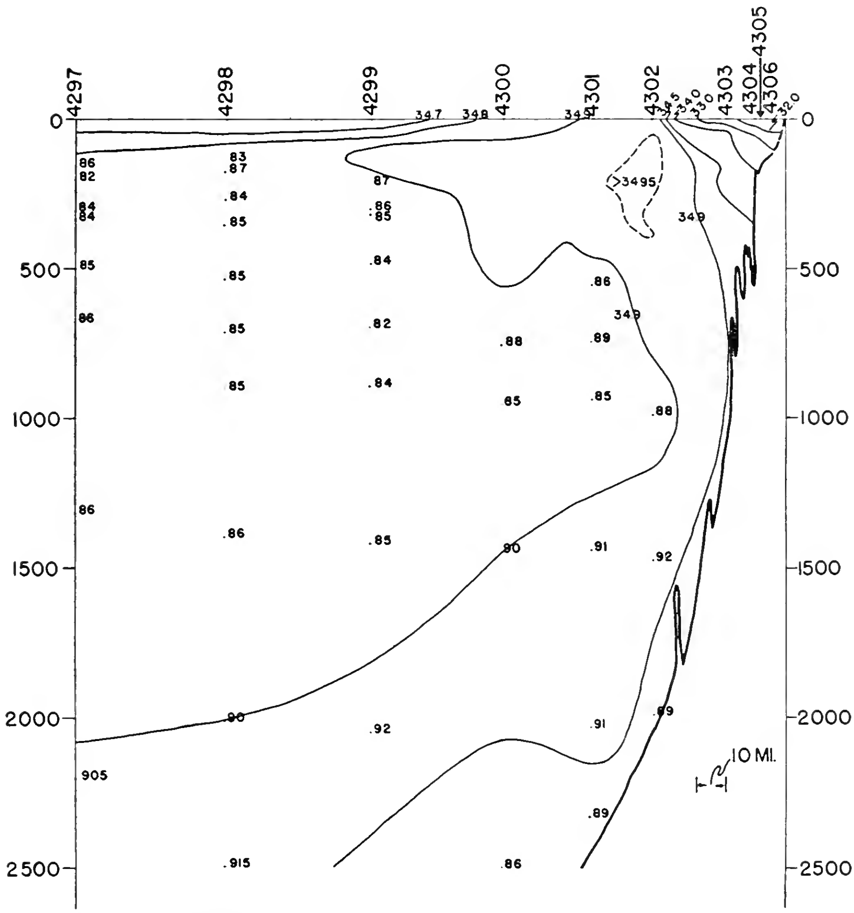

FIGURE 28.—Salinity distribution off Cape Farewell, Greenland, 3–5 August 1950.

low, being 34.99‰. As seen from figure 28, the cross sectional area in which the salinity exceeded 34.95‰ was small. Although in 1949 the drop in temperature which accompanied the drop in salinity was sufficient to increase the density by about 0.10 in σ_t, in 1950 the densities were about normal.

The dynamic topography of the sea surface in the immediate vicinity of the section from South Wolf Island to Cape Farewell is shown in figure 29. The general features of circulation in the vicinity of this section which are characteristically present are to be found here with fewer complications of pattern than is usual. The eddy or meander that is associated with the shoal off Hamilton Inlet, the Labrador Current, the counterclockwise circulation in the central part of the Labrador Sea, and the west Greenland Current off Cape Farewell all are present. Graphical and numerical examination of the volumes of flow and heat transport across this section on the Labrador side

gives 5.92 million cubic meters per second and a mean temperature of 2.63° C for the Labrador Current with an additional 2.96 million cubic meters per second in the central eddy of the Labrador Sea. On the Greenland side the total northwesterly moving volume of flow is 9.20 of which at least 1.44 is definitely a part of the central eddy. The remaining 7.76 with a mean temperature of 4.26° C probably constitutes the effective West Greenland Current although about 1.5 of it has the central eddy as its source.

In Bulletin 35 of this series approximate normal seasonal variation curves were derived for the volume of flow of the two components which usually make up the West Greenland Current at Cape Farewell, the East Greenland Current and the Irminger Current, assuming constant mean temperatures of 3.2° C and 5.5° C, respectively, for these components. If the volume of flow and the mean temperature of the effective West Greenland Current found in 1950 are taken as 7.76 and 4.26 the breakdown into volume of flow of the two components, using the same assumed mean temperatures, gives 4.18 for the East Greenland Current component and 3.58 for the Irminger Current component. From the preceding paragraph, however, it would seem that about 1.5 on the off-shore side of the 7.76 is contributed directly from the central eddy of the Labrador Sea. We also note that from the difference between the flow of the Labrador Current past the South Wolf Island section and the northern section of the triangle about 2.92 million cubic meters per second recurve to the eastward before reaching the triangle and, with some admixture of water from the outer margins of the Atlantic Current, probably contribute to the West Greenland Current without making the journey to Iceland. Thus about 1.5 plus 2.92 or 4.42 should be deducted from the 7.76 of the effective West Greenland Current before considering the remainder as being composed of Irminger Current water and East Greenland Current water. This would leave only 3.34 as being derived from these sources.

An examination of the velocity and temperature profiles shows that the inshore 3.34 million cubic meters per second extend out to and just beyond the axis of maximum velocities and have a mean temperature of about 3.3° C. Thus by computation again, on the assumption of constant mean temperatures of 3.2° and 5.5° for the East Greenland Current and Irminger Current components, 3.2 is derived for the volume of the former and 0.14 for the latter. The conclusion is that the contribution from the Irminger Current to the West Greenland Current again was very small in 1950 although compensating mechanisms bringing in other water from the North Atlantic eddy produced a mean temperature of the West Greenland Current which was close to normal. The volumes of flow expressed in millions of cubic meters per second, the mean temperatures in degrees centigrade, and the heat transport in millions of cubic meter degrees centigrade per second

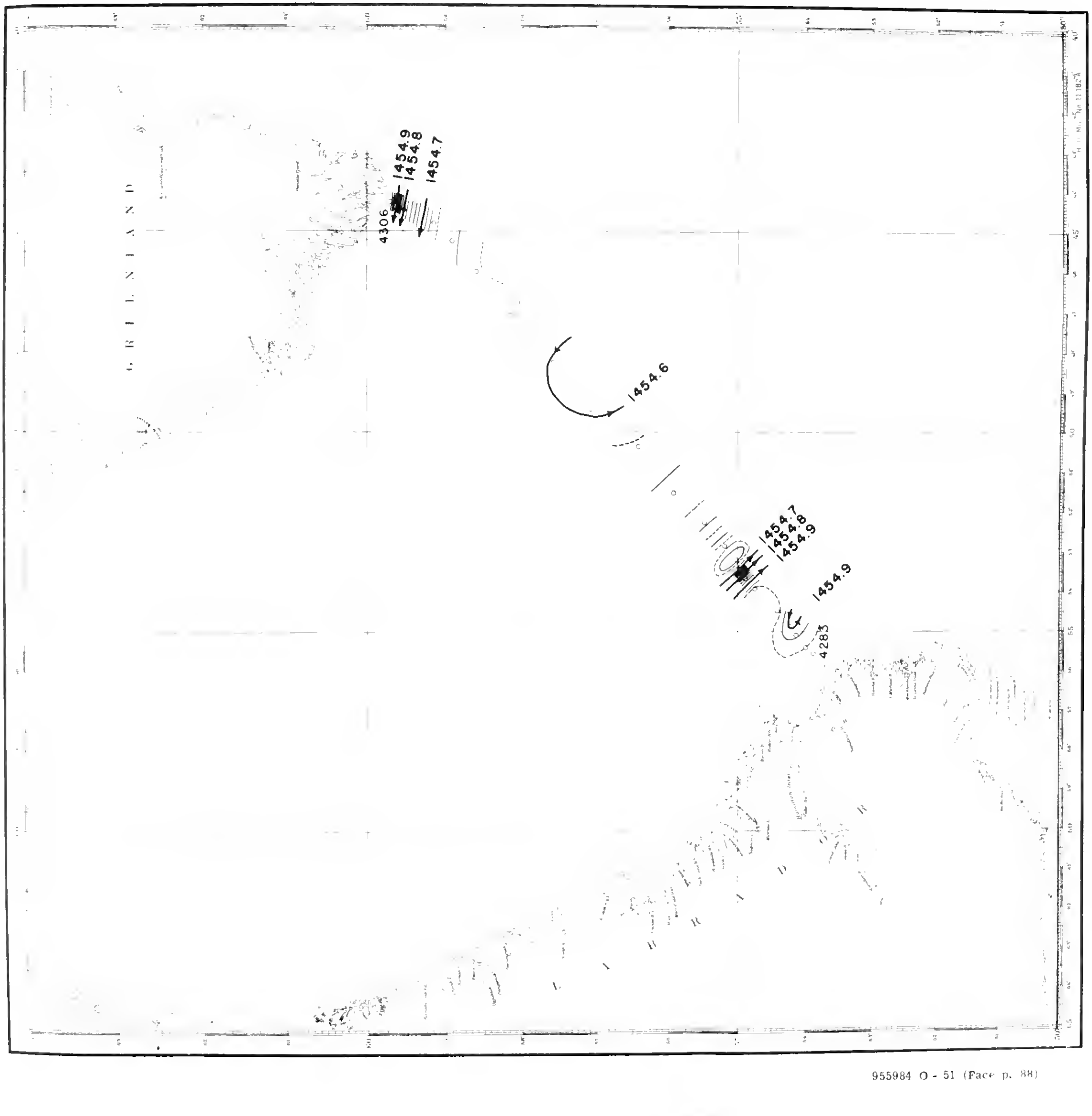

FIGURE 29.—Dynamic topography of the sea surface relative to the 1500-decibar surface, from data collected 31 July–5 August 1950.

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are tabulated below for the Labrador Current off South Wolf Island, Labrador, and for the West Greenland Current off Cape Farewell, Greenland, for all available occupations of these sections.

	Labrador Current South Wolf Island			West Greenland Current Cape Farewell		
	Volume	Mean Temperature	Heat transport	Volume	Mean Temperature	Heat transport
1928 May				4.0	4.1	16.4
1928 July	5.1	3.3	16.5			
1928 September				4.4	5.5	24.1
1931	1.3	1.7	2.2	3.7	5.3	19.5
1933	7.60	3.41	25.90	5.76	4.19	24.13
1934	5.03	2.68	13.50	2.91	5.1	14.86
1935 March				7.5	4.0	30.0
1935 August	4.22	2.76	11.65	8.50	4.99	42.44
1936	3.32	1.27	4.22	6.37	4.05	25.83
1938	4.20	2.92	12.25	5.43	4.69	25.04
1939	4.56	2.69	12.27	6.31	4.19	26.46
1940	2.75	1.52	4.17			
1941	2.32	2.60	6.03	6.46	4.87	31.46
1948	3.01	2.21	6.65	1.52	3.93	5.97
1949	5.16	2.3	11.87	2.52	3.62	9.12
1950	5.92	2.63	15.57	7.76	4.26	33.06

From comparison of the results of the measurements made in 1950 with those of earlier occupations it is seen that the circulation in the Labrador Sea was abnormally active in 1950. The abnormal activity was not confined to the Labrador Sea, since the estimate of the volume of flow of the East Greenland Current contribution to the West Greenland Current of 3.2 is more than three times the seasonal normal for early August. While the mean temperatures of both the Labrador Current off South Wolf Island and the West Greenland Current off Cape Farewell were close to average values, the unusually vigorous circulation resulted in outstandingly large rates of heat transport both in the Labrador Current and in the West Greenland Current.

In 1948 an aerial ice census was made in Baffin Bay with the bergs being counted by direct visual observation. Another such census was made in 1949 and in this census the bergs again were counted by direct visual observation and also were photographed and the number of bergs determined from the photographs. In the areas of great concentrations of bergs and where the bergs were in the vicinity of bays and fjords the photographs indicated that many bergs were missed in direct visual observation. In areas away from land and where concentrations were not as great, however, the direct visual count was in good agreement with the photographic count. It was hoped that additional censuses could be made in succeeding years so that a series of at least three successive annual censuses would be available for the study of the number of years which elapse from the summer a berg is calved in northwest Greenland to the summer it appears in the Grand Banks region, and for the study of mortality rates during the different phases of this journey. No census could be made in 1950 and so our series consists of the two censuses taken in the summers of 1948 and 1949.

The distribution of bergs found has been shown in charts appearing in the bulletins of this series reporting the work of those years. While two censuses are inadequate to fix the travel time there is some evidence that it is 3 years. If we assume a 3-year travel time, and and divide Baffin Bay into areas A, B, and C being guided by the distribution found and by what is known of the circulation in Baffin Bay; then the bergs found in area A may be assumed to represent those calved the year of the census, those found in area B those calved 1 year before the census, and those found in area C those calved 2 years before the census and to appear in the Grand Banks region the year following the census. Such a division has been made to define area A as easterly of a series of rhumb lines drawn from 66° N., 56° W., to 70° N., 56° W., to 70° N., 60° W., to 71° N., 60° W., to 71° N., 62° W., to 72° N., 62° W., to 72° N., 64° W., to 74° N., 64° W., to 74° N., 70° W., to 75° N., 70° W., to 75° N., 66° W., and thence north to the Greenland coast; area B as northwesterly of this boundary and a series of rhumb lines beginning at 72°N., 64° W., and continuing to 72° N., 66° W., to 71° N., 66° W., to 71° N., 68° W., and thence south to the coast of Baffin Island; and area C as southerly of areas A and B and bounded on the south by the 66th parallel.

Since the visual and photographic counts made in 1949 of the bergs in area A were 14,206 and 33,962 the visual count of bergs in this area in 1948 was adjusted by a factor of 2.4. Visual and photographic counts of the bergs in area B in 1949 were 2,788 and 4,933 giving a factor of 1.8 for the adjustment of the visual count of bergs in area B in 1948. As there was agreement between the two counts of the bergs in area C in 1949, the visual count of bergs in this area in 1948 was not adjusted. The resulting numbers of bergs are tabulated below:

Area	1948		1949	
	Visual	Adjusted	Visual	Adjusted
A	9, 691	23, 258	14, 206	33, 962
B	1, 490	2, 682	2, 788	4, 933
C	947	947	1, 391	1, 337

If the bergs appearing in the Grand Banks region 1 year were in area C the previous summer and in area B 2 years earlier and in area A 3 years earlier, then during the interval between 1948 and 1949 the survival rates were:

$$\text{A to B}=\frac{4933}{23258}=21.2\%$$

$$\text{B to C}=\frac{1337}{2682}=49.9\%$$

$$\left.\begin{aligned} \text{C to Grand Banks} &= \frac{47}{947} = 5.0\% \\ \text{and 1949 to 1950 C to Grand Banks} &= \frac{462}{1337} = 34.6\% \end{aligned}\right\} \text{mean } 19.8\%$$

The over-all survival rate would be their product or 2.1 percent (97.9 percent mortality). On this basis it might be expected that the number of bergs appearing south of 48° N., would be 487 in 1951 and 713 in 1952. It is probable that these survival rates are not normal. From a preceding table the volume of flow and heat transport of the West Greenland Current past Cape Farewell was seen to have been exceptionally small in 1948 and 1949, and exceptionally large in 1950. Thus the censuses of 1948 and 1949 are not well adapted to the determination of normal survival rates although they might be ideal in combination with other data in estimating the importance of the effect of such factors as the heat transport of the West Greenland Current on survival rates.

The survival rate for the part of the journey from area B to area C is the largest of the three. However, it is suspected that this figure of 49.9 percent is too low. Areas B and C are located in the coldest part of Baffin Bay and roughly coincide with that region in which Smith [7] has indicated that no melting takes place.

The survival rates from A to B and that from C to the Grand Banks, being small, indicate that the factors affecting the disintegration of bergs in these two parts of the journey are important. The large difference in the survival rate from C to the Grand Banks during the year 1948–49 as compared with the year 1949–50 indicates that the effective factors in this part of the journey are not only important but variable. The number of bergs calved in any year is of course a basic starting point. As seen from the difference of about 10,000 between the adjusted count for 1948 and the photographic count for 1949, application of the survival rate of 2.1 percent would mean a variation of some 210 bergs in the numbers reaching south of the 48th parallel in two successive years if the conditions affecting the mortality of these particular crops are the same. Thus an important factor in any forecast of the number of bergs which will reach the Grand Banks region is the departure from average of the number of bergs calved.

The mortality during the part of the journey from area A to area B is seen to be large but since we have but one value for this survival rate nothing is known as to its variability and the importance, therefore, of departures from average conditions. Possibly this may be affected by the changes in the rate at which water-borne heat is supplied to Baffin Bay and may be deduced from the heat transport of the West Greenland Current passing Cape Farewell the summer the bergs are calved.

[7] Smith, Edward H. "The *Marion* expedition to Davis Strait and Baffin Bay, Arctic Ice," U. S. Coast Guard Bull. No. 19, pt. 3, fig. 121, p. 200 (1931), Washington.

The important factor of mortality occurring along the Labrador Coast (evidenced by the small and variable survival rates from C to the Grand Banks) probably is related to stranding and melting. Stranding can be attacked through examination of the departure from normal of the barometric pressure gradients producing onshore winds. Melting can be attacked through examination of the departure from normal of the barometric pressure gradients producing offshore winds and through a study of water-borne heat supplied to the Labrador Current by the West Greenland Current in the northern part of the Labrador Sea. This latter may be deduced from the heat transport of the West Greenland Current passing Cape Farewell the summer before the bergs reach the Grand Banks region.

Any forecast formulae which are based on transportation facilities alone, such as the methods developed by Smith [8] in 1926 and by Schell [9] in 1950, must remain rough approximations until modified to include the four factors discussed above, namely, the departure from average of the number of bergs calved from the glacier, the departure from average mortality in the journey from area A to area B, the departure from average of the number of bergs stranding along the Labrador coast and the departure from average melting during that part of the journey. Mensurable possible indices of some of these factors exist but they have been measured an insufficient number of times to permit evaluation of the relative importance of the different factors, or even the validity of the supposed indices. A more detailed treatment of them is deferred pending the accumulation of additional data.

SUMMARY

1. The circulation in the Grand Banks region has been discussed on the basis of dynamic topographic charts resulting from three surveys of the area made during the 1950 ice season.

2. The volume of flow and mean temperature of the Labrador Current at three selected sections in the Grand Banks region has been determined for each of the three surveys made in 1950 and discussed with respect to the results of earlier occupations of these sections. Tentative normal seasonal variation curves have been presented for volume of flow and mean temperature of the Labrador Current at each of the three sections.

3. The location of the northern boundary of Atlantic Current water found during the three surveys made in 1950 has been discussed with respect to the strength of the Labrador Current as measured and the

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[8] Smith, Edward H. "The *Marion* expedition to Davis Strait and Baffin Bay, Arctic Ice." U. S. Coast Guard Bull. No. 19, pt. 3, pp. 180-189 (1931), Washington.

[9] Schell, I. I. "On foreshadowing the severity of the iceberg season south of Newfoundland." Unpublished paper read before the Thirty-first Annual Meeting of the Section of Oceanography of the American Geophysical Union, May 1950.

strength of the Atlantic Current as inferred from changes in the difference in sea level across the Gulf Stream at the Charleston-Bermuda section.

4. The mean temperature and volume of flow of the Atlantic Current south of the Grand Banks has been deduced from section W extended southward to the 38th parallel.

5. The temperature-salinity relationships for the three water masses found in the Grand Banks region in 1950 have been compared with conditions found in earlier years.

6. One complete and two partial triangular surveys of the area immediately north of the Grand Banks have been discussed with respect to stability of current pattern, volume of flow, and the division of the Labrador Current into its eastern and western branches.

7. A series of hourly current measurements made in the open sea with a von Arx geomagnetic electrokinetograph and showing a rotary current of about 16-hour period has been presented.

8. The thermal characteristics of the intermediate water of the Labrador Sea found in 1950 have been compared with earlier measurements and a return to the conditions which existed prior to 1940 noted.

9. The continued deficiency of the Irminger Current component of the West Greenland Current as deduced from salinity observations has been noted with supporting evidence inferred from volumes of flow and mean temperatures of the West Greenland Current passing Cape Farewell and the Labrador Current passing South Wolf Island. Exceptionally active circulation in the Labrador Sea and in the East Greenland Current has been deduced from these measurements.

10. The aerial ice censuses of Baffin Bay made in 1948 and 1949 have been discussed with respect to partial and total survival rates of bergs in their journey from northwest Greenland to the Grand Banks region and with respect to indication of important factors in berg mortality.

The data collected during the 1950 season and postseason cruises are tabulated below. The individual station headings give the station number, date, geographical position, depth of water, and the dynamic height of the sea surface used in the construction of the dynamic topographic charts shown in figures 16, 17, 18, and 23 for which the dynamic heights have been referred to the 1,000-decibar surface and figure 29 for which the dynamic heights have been referred to the 1,500-decibar surface. The depths of water are uncorrected sonic soundings based on a sounding velocity of 800 fathoms per second. Where depths of the scaled values are enclosed in parentheses the data are based on extrapolated vertical distribution curves of temperature or salinity or both. Asterisks appearing before observed temperatures indicate that these temperatures were determined from the depth of reversal and the corrected reading of an unprotected thermometer. The symbol σ_t signifies 1,000 (density−1) at atmospheric pressure and temperature *t*.

Tables of Oceanographic Data

STATIONS OCCUPIED IN 1950

Station 4000; Apr. 6; latitude 43°35′ N., longitude 51°27′ W., depth 80 meters; dynamic height 971.157

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.45	32.71	0	2.45	32.71	26.12
23	2.00	32.74	25	2.00	32.71	26.19
47	1.94	32.76	50	1.80	32.76	26.21
70	0.75	33.00	75	0.50	33.03	26.51

Station 4001; Apr. 6; latitude 43°33′ N., longitude 51°44′ W., depth 161 meters, dynamic height 971.131

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.36	32.97	0	1.36	32.97	26.41
23	0.85	32.98	25	0.80	32.98	26.46
45	−0.09	33.14	50	−0.25	33.17	26.66
68	−0.79	33.26	75	−0.95	33.26	26.76
91	−1.15	33.27	100	−1.15	33.29	26.79
136	−0.87	33.42	(150)	−0.45	33.48	26.92

Station 4002; Apr. 6; latitude 43°30′ N., longitude 51°58′ W., depth 340 meters; dynamic height 971.131

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.51	32.88	0	1.51	32.88	26.33
20	0.70	33.06	25	0.45	33.10	26.57
41	−0.34	33.20	50	−0.60	33.20	26.70
61	−0.91	33.21	75	−1.15	33.25	26.76
82	−1.26	33.27	100	−1.40	33.29	26.79
123	−1.37	33.30	150	−1.15	33.38	26.87
163	−0.98	33.44	200	0.50	33.68	27.03
245	2.42	33.98	(300)	3.20	34.20	27.25

Station 4003; Apr. 7; latitude 43°25′ N., longitude 51°49′ W., depth 333 meters, dynamic height 971.147

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.88	32.85	0	1.88	32.85	26.28
22	1.66	32.85	25	1.65	32.87	26.31
44	0.75	33.01	50	0.40	33.06	26.54
65	−0.48	33.17	75	−0.60	33.20	26.70
87	−0.66	33.24	100	−0.70	33.27	26.76
131	−0.85	33.34	150	−0.95	33.38	26.86
175	−1.04	33.45	200	−0.65	33.55	26.99
262	1.33	33.88	(300)	2.20	34.07	27.24

Station 4004; Apr. 7; latitude 43°23.5′ N., longitude 51°52′ W., depth 491 meters, dynamic height 971.147

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.63	32.87	0	1.63	32.87	26.31
25	0.94	32.94	25	0.94	32.94	26.42
50	−0.59	33.17	50	−0.59	33.17	26.67
75	−1.04	33.25	75	−1.04	33.25	26.76
99	−1.27	33.28	100	−1.25	33.28	26.78
149	−1.08	33.40	150	−1.05	33.40	26.88
199	−0.92	33.55	200	−0.90	33.55	27.00
298	−0.04	33.79	300	0.00	33.80	27.16
344	0.87	34.00	400	1.95	34.33	27.46
557	3.86	34.78				

Station 4005; Apr. 7; latitude 43°19′ N., longitude 51°58′ W., depth 1,079 meters; dynamic height 971.143

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.23	32.88	0	2.23	32.88	26.28
26	−0.47	33.22	25	−0.40	33.22	26.71
52	−1.04	33.25	50	−1.00	33.25	26.76
78	−1.44	33.30	75	−1.45	33.29	26.79
104	−1.31	33.36	100	−1.35	33.35	26.84
156	−0.53	33.60	150	−0.60	33.57	27.00
208	−0.35	33.73	200	−0.35	33.71	27.10
312	−0.02	33.83	300	−0.05	33.82	27.18
397	1.47	34.20	400	1.50	34.22	27.41
594	3.11	34.63	600	3.15	34.64	27.60
792	3.69	34.80	800	3.70	34.80	27.68
997	3.66	34.86	1,000	3.65	34.86	27.73

Station 4006; Apr. 7-8; latitude 43°14′ N., longitude 52°05′ W., depth 2,012 meters, dynamic height 971.173

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.92	32.90	0	1.92	32.90	26.31
24	0.51	33.14	25	0.50	33.15	26.60
48	−0 36	33.22	50	−0.40	33.22	26.71
72	−1.09	33.25	75	−1.15	33.25	26.76
95	−1.41	33.28	100	−1.40	33.29	26.79
144	−1.32	33.41	150	−1.25	33.43	26.91
191	−0.66	33.58	200	−0.60	33.61	27.03
286	−0.14	33.83	300	0.00	33.85	27.20
286	−0.06	33.82	400	0.80	34.00	27.27
433	1.14	34.06	600	3.40	34.70	27.63
584	3.24	34.66	800	3.95	34.84	27.68
745	3.96	34.84	1,000	3.75	34.85	27.71
1,171	3.52	34.85				

Station 4007; Apr. 8; latitude 43°04′ N., longitude 52°20′ W., depth 2,880 meters, dynamic height 971.078

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.73	33.06	0	0.73	33.06	26.52
28	−0.68	33.18	25	−0.55	33.17	26.67
57	−1.32	33.27	50	−1.20	33.25	26.76
85	−1.44	33.30	75	−1.45	33.29	26.79
112	−1.25	33.42	100	−1.35	33.36	26.85
169	−0.81	33.62	150	−0.90	33.56	27.01
226	0.30	33.81	200	−0.25	33.72	27.11
338	6.36	34.99	300	4.30	34.62	27.48
380	6.04	34.99	400	5.85	34.98	27.57
578	4.30	34.87	600	4.20	34.87	27.69
780	3.92	34.88	800	3.90	34.88	27.72
990	3.94	34.91	1,000	3.95	34.91	27.74
1,540	3.68	34.925				

STATIONS OCCUPIED IN 1950—Continued

Station 4008; Apr. 8; latitude 42°43′ N., longitude 52°53′ W., depth 3,704 meters, dynamic height 971.115

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.99	33.16	0	4.99	33.16	26.24
26	4.84	33.16	25	4.85	33.16	26.25
52	4.29	33.24	50	4.30	33.23	26.37
78	4.24	33.34	75	4.25	33.43	26.53
104	5.97	34.06	100	5.75	34.04	26.84
156	3.42	34.05	150	3.65	34.05	27.09
208	3.22	34.17	200	3.20	34.15	27.21
382	3.40	34.53	300	3.30	34.36	27.37
584	4.28	34.88	400	3.45	34.57	27.52
795	3.88	34.88	600	4.30	34.88	27.68
1,006	4.14	34.955	800	3.90	34.88	27.72
1,551	3.63	34.91	1,000	4.15	34.95	27.75

Station 4009; Apr. 8; latitude 42°20′ N., longitude 52°24′ W., depth 3,749 meters, dynamic height 971.091

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.58	33.11	0	4.59	33.11	26.24
24	3.01	33.045	25	2.90	33.04	26.36
47	1.94	33.05	50	2.00	33.16	26.52
71	6.51	34.20	75	6.80	34.26	26.88
94	7.96	34.57	100	8.15	34.67	27.01
141	9.24	35.02	150	9.00	34.97	27.12
188	5.58	34.46	200	5.55	34.48	27.21
282	5.64	34.63	300	5.40	34.63	27.35
463	2.91	34.62	400	3.80	34.63	27.53
629	4.89	34.99	600	4.65	34.95	27.70
811	4.39	34.97	800	4.45	34.97	27.74
1,313	3.75	34.93	1,000	4.10	34.95	27.76

Station 4010; Apr. 8; latitude 42°02′ N., longitude 51°58′ W., depth 3,841 meters, dynamic height 971.112

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	11.23	34.71	0	11.23	34.71	26.54
21	11.08	34.74	25	11.10	34.77	26.60
41	11.86	35.13	50	12.10	35.22	26.76
62	12.38	35.27	75	12.20	35.23	26.75
83	12.00	35.11	100	11.40	35.03	26.74
124	10.55	34.96	150	9.95	34.97	26.96
165	9.62	34.98	200	7.90	34.82	27.17
248	7.40	34.81	300	4.90	34.62	27.41
230	4.56	34.36	400	4.50	34.72	27.53
390	4.50	34.71	600	5.20	34.98	27.65
578	5.22	34.98	800	4.50	34.96	27.72
739	4.68	34.97	1,000	4.10	34.94	27.75
1,166	3.88	34.93				

Station 4011; Apr. 9; latitude 42°03.5′ N., longitude 50°50′ W., depth 3,146 meters

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰
470	4.28	34.91
689	3.62	34.865
898	3.53	34.86
1,126	3.55	34.88

Station 4012; Apr. 9; latitude 42°00.5′ N., longitude 51°02′ W., depth 3,310 meters, dynamic height 970.944

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.17	33.26	0	1.17	33.26	26.66
26	0.40	33.62	25	0.40	33.60	26.98
52	2.78	33.94	50	2.65	33.93	27.08
78	3.03	34.08	75	3.05	34.06	27.15
104	1.61	34.11	100	1.75	34.10	27.29
156	1.46	34.26	150	1.45	34.24	27.42
208	2.11	34.45	200	1.95	34.42	27.54
312	2.82	34.65	300	2.75	34.63	27.63
376	3.08	34.70	400	3.15	34.72	27.67
600	3.61	34.82	600	3.61	34.82	27.71
848	3.55	34.86	800	3.55	34.86	27.74
1,033	3.49	34.85	1,000	3.50	34.85	27.74
1,449	3.60	34.88				

Station 4013; Apr. 9–10; latitude 42°17′ N., longitude 51°25′ W., depth 2,789 meters, dynamic height 970.980

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.78	33.40	0	1.78	33.40	26.74
25	2.98	33.81	25	2.98	33.81	26.96
50	2.46	33.91	50	2.46	33.91	27.08
75	2.77	34.04	75	2.77	34.04	27.16
101	4.21	34.32	100	4.20	34.31	27.24
151	4.53	34.52	150	4.50	34.52	27.37
202	1.56	34.28	200	1.55	34.29	27.45
303	2.51	34.55	300	2.50	34.54	27.58
400	2.93	34.67	400	2.93	34.67	27.65
598	3.39	34.76	600	3.40	34.71	27.64
797	3.63	34.855	800	3.65	34.85	27.72
997	3.60	34.85	1,000	3.60	34.85	27.73
1,495	3.54	34.88				

Station 4014; Apr. 10; latitude 42°38.5′ N., longitude 51°00′ W., depth 1,847 meters, dynamic height 971.036

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.77	33.78	0	4.77	33.78	26.76
24	6.47	34.17	25	6.50	34.18	26.86
49	7.72	34.57	50	7.70	34.57	27.00
73	7.17	34.51	75	7.20	34.51	27.03
98	7.42	34.61	100	7.40	34.61	27.08
147	7.42	34.67	150	7.40	34.68	27.13
196	7.39	34.85	200	7.40	34.86	27.27
294	6.68	34.955	300	6.05	34.94	27.52
327	3.39	34.50	400	3.15	34.58	27.55
491	3.09	34.69	600	3.55	34.80	27.69
655	3.75	34.84	800	3.65	34.84	27.71
833	3.59	34.84	1,000	3.55	34.84	27.72
1,305	3.52	34.835				

Station 4015; Apr. 10; latitude 42°49.5′ N., longitude 50°51′ W., depth 869 meters, dynamic height 971.138

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.66	32.79	0	2.66	32.79	26.18
25	2.54	32.79	25	2.54	32.79	26.19
49	0.26	33.04	50	0.25	33.04	26.54
74	−0.31	33.18	75	−0.35	33.18	26.67
98	−0.52	33.26	100	−0.55	33.26	26.74
146	−0.75	33.49	150	−0.70	33.52	26.97
196	1.04	33.77	200	1.10	33.78	27.07
294	0.43	33.93	300	1.35	34.03	27.26
303	2.25	34.14	400	2.35	34.40	27.48
468	2.95	34.62	600	3.50	34.79	27.69
644	3.58	34.815	800	3.55	34.81	27.70
836	3.53	34.81	1,000	3.50	3' 82	27.72

STATIONS OCCUPIED IN 1950—Continued

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t

Station 4016; Apr. 10; latitude 42°54.5′ N., longitude 50°46′ W., depth 293 meters, dynamic height 971.105

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.60	32.76	0	2.60	32.76	26.15
15	1.11	32.95	25	0.00	33.07	26.57
30	−0.52	33.12	50	−1.25	33.18	26.70
45	−1.21	33.17	75	−1.45	33.24	26.76
60	−1.43	33.22	100	−1.45	33.26	26.77
118	−1.49	33.28	150	−1.35	33.37	26.86
175	−1.06	33.47	200	−0.50	33.63	27.04
230	0.28	33.83				

Station 4017; Apr. 10; latitude 43°01′ N., longitude 50°40′ W., depth 106 meters, dynamic height 971.099

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.82	33.05	0	0.82	33.05	26.52
25	−0.20	33.16	25	−0.20	33.16	26.65
50	−0.81	33.22	50	−0.81	33.22	26.72
74	−1.07	33.26	75	−1.10	33.26	26.76
94	−0.10	33.27	100	−1.10	33.27	26.77

Station 4018; Apr. 10; latitude 43°04.5′ N., longitude 50°32′ W., depth 89 meters, dynamic height 971.102

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.25	33.02	0	1.25	33.02	26.46
24	0.97	33.05	25	0.95	33.05	26.51
47	−0.62	33.20	50	−0.65	33.22	26.72
71	−0.98	33.28	75	−1.00	33.29	26.78

Station 4019; Apr. 10; latitude 43°21′ N., longitude 50°14′ W., depth 55 meters, dynamic height 971.116

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.25	32.62	0	2.25	32.62	26.07
21	0.40	32.92	25	0.40	32.92	26.43
48	0.41	32.93	50	0.40	32.93	26.44

Station 4020; Apr. 10; latitude 43°00′ N., longitude 50°14′ W., depth 91 meters, dynamic height 971.089

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.63	32.92	0	0.63	32.92	26.35
24	1.34	33.00	25	1.30	33.01	26.46
49	−0.71	33.20	50	−0.75	33.20	26.71
73	−0.98	33.24	75	−1.00	33.24	26.75

Station 4021; Apr. 10; latitude 42°47′ N., longitude 50°16′ W., depth 375 meters, dynamic height 971.070

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.49	33.04	0	0.49	33.04	26.52
25	−0.63	33.10	25	−0.63	33.10	26.62
52	−1.33	33.17	50	−1.25	33.16	26.69
77	−1.64	33.30	75	−1.65	33.28	26.79
103	−1.30	33.52	100	−1.40	33.50	26.97
154	−0.03	33.80	150	−0.10	33.85	27.20
206	0.43	33.97	200	0.40	33.96	27.27
309	1.48	34.20	300	1.10	34.18	27.38

Station 4022; Apr. 11; latitude 42°40′ N., longitude 50°16′ W., depth 1,829 meters, dynamic height 971.016

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	−0.52	33.08	0	−0.52	33.08	26.60
24	−0.61	33.11	25	−0.65	33.11	26.63
49	−1.58	33.21	50	−1.60	33.21	26.74
73	−1.61	33.36	75	−1.60	33.36	26.86
99	−0.72	33.62	100	−0.70	33.62	27.05
147	1.04	33.97	150	1.10	33.98	27.24
196	4.64	34.56	200	4.60	34.56	27.39
295	2.47	34.56	300	2.45	34.56	27.60
361	2.66	34.61	400	2.85	34.65	27.64
545	3.51	34.77	600	3.55	34.78	27.67
733	3.54	34.82	800	3.55	34.83	27.71
934	3.55	34.85	1,000	3.55	34.85	27.73
1,471	3.59	34.87				

Station 4023; Apr. 11; latitude 42°20′ N., longitude 50°14′ W., depth 2,770 meters, dynamic height 970.990

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	−0.51	33.09	0	−0.51	33.09	26.60
27	−0.57	33.19	25	−0.55	33.18	26.68
53	−1.52	33.40	50	−1.45	33.37	26.86
80	2.28	33.92	75	1.40	33.81	27.08
106	2.79	33.98	100	2.70	33.97	27.11
160	3.30	34.29	150	3.20	34.25	27.29
213	1.53	34.21	200	1.95	34.23	27.38
319	2.99	34.61	300	2.85	34.54	27.55
405	3.71	34.78	400	3.70	34.77	27.66
609	4.41	34.97	600	4.40	34.97	27.74
816	4.06	34.93	800	4.10	34.93	27.74
1,024	3.78	34.93	1,000	3.80	34.93	27.77
1,548	3.57	34.93				

Station 4024; Apr. 11, latitude 41°57′ N., longitude 50°12′ W., depth 3,566 meters, dynamic height 970.961

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.10	33.46	0	4.10	33.46	26.58
27	0.49	33.42	25	0.55	33.42	26.83
52	0.94	33.62	50	0.85	33.60	26.95
79	2.21	33.90	75	1.95	33.85	27.07
104	2.98	34.18	100	2.85	34.13	27.22
157	3.40	34.48	150	3.35	34.45	27.43
210	3.72	34.63	200	3.65	34.60	27.52
311	4.46	34.86	300	4.40	34.84	27.63
429	4.50	34.92	400	4.50	34.91	27.68
637	4.31	34.94	600	4.35	34.93	27.71
842	4.10	34.95	800	4.15	34.95	27.75
1,057	3.92	34.95	1,000	4.00	34.95	27.77
1,601	3.55	34.94				

Station 4025; Apr. 10; latitude 41°27′ N., longitude 50°09′ W., depth 3,741 meters, dynamic height 970.970

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.78	33.09	0	3.78	33.09	26.30
27	0.87	33.49	25	1.05	33.44	26.81
53	1.56	33.80	50	1.40	33.67	26.97
80	2.69	34.05	75	2.65	34.02	27.16
106	1.79	34.10	100	2.05	34.09	27.26
160	1.01	34.16	150	1.05	34.14	27.37
213	2.84	34.45	200	2.40	34.38	27.46
319	3.96	34.71	300	3.85	34.67	27.56
390	4.12	34.84	400	4.15	34.85	27.67
587	4.19	34.91	600	4.15	34.91	27.72
788	3.92	34.91	800	3.90	34.91	27.75
991	3.80	34.92	1,000	3.80	34.92	27.77
1,504	3.53	34.90				

STATIONS OCCUPIED IN 1950—Continued

Station 4026; Apr. 11; latitude 42°04′ N., longitude 49°28′ W., depth 3,246 meters, dynamic height 970.977

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.79	33.41	0	2.79	33.41	26.66
26	1.85	33.72	25	1.85	33.71	26.96
53	1.11	33.77	50	1.15	33.76	27.06
79	1.83	33.90	75	1.45	33.86	27.12
105	6.58	34.66	100	5.30	34.52	27.28
157	7.45	34.99	150	7.40	34.98	27.36
209	6.16	34.87	200	6.40	34.88	27.42
314	5.24	34.91	300	5.30	34.90	27.58
396	5.11	34.96	400	5.10	34.96	27.65
595	4.31	34.93	600	4.30	34.93	27.71
795	4.07	34.93	800	4.05	34.93	27.74
997	3.97	34.94	1,000	3.95	34.94	27.76
1,507	3.58	34.92				

Station 4027; Apr. 12; latitude 41°43′ N., longitude 49°01′ W., depth 2,640 meters, dynamic height 971.053

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	5.88	33.31	0	5.88	33.31	26.25
21	7.26	33.82	25	7.20	33.78	26.45
43	2.66	33.38	50	2.70	33.45	26.70
65	3.87	33.77	75	5.45	34.06	26.90
87	6.76	34.43	100	6.70	34.46	27.06
129	6.52	34.50	150	6.80	34.63	27.17
172	7.17	34.76	200	5.20	34.38	27.18
259	3.48	34.50	300	6.30	34.98	27.51
197	5.34	34.38	400	4.40	34.84	27.63
286	6.55	34.99	600	4.10	34.88	27.70
369	4.62	34.85	(800)	4.05	34.92	27.74
471	4.12	34.83	(1,000)	4.00	34.92	27.75
742	4.02	34.92				

Station 4028; Apr. 12; latitude 42°14′ N., longitude 47°53′ W., depth 3,548 meters, dynamic height 971.281

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	15.09	35.84	0	15.09	35.84	26.62
22	15.06	35.83	25	15.05	35.83	26.62
43	15.05	35.83	50	15.05	35.83	26.62
65	15.06	35.90	75	15.05	35.90	26.67
86	15.03	35.90	100	15.00	35.90	26.68
130	14.88	35.90	150	14.50	35.82	26.73
174	14.05	35.68	200	13.65	35.66	26.79
260	12.72	35.60	300	11.90	35.50	27.02
399	9.32	35.18	400	9.30	35.18	27.23
603	5.70	34.96	600	5.75	34.96	27.57
811	4.35	34.92	800	4.90	34.92	27.65
1,016	4.15	34.94	(1,000)	4.15	34.94	27.74
1,532	3.76	34.93				

Station 4029; Apr. 12; latitude 42°31′ N., longitude 48°24′ W., depth 2,789 meters, dynamic height 970.961

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.93	33.51	0	3.93	33.51	26.64
27	1.20	33.71	25	1.20	33.70	27.01
53	2.38	34.00	50	2.35	33.97	27.14
80	2.00	34.07	75	2.05	34.06	27.24
106	2.02	34.14	100	2.00	34.12	27.29
160	2.19	34.31	150	2.15	34.27	27.40
213	3.01	34.53	200	2.80	34.49	27.51
319	3.12	34.66	300	3.05	34.63	27.60
393	4.42	34.89	400	4.40	34.89	27.67
592	4.39	34.95	600	4.40	34.95	27.72
794	4.16	34.95	800	4.15	34.95	27.75
			(1,000)	4.05	34.94	27.75

Station 4030; Apr. 12; latitude 42°39.5′ N., longitude 49°03′ W., depth 2,276 meters, dynamic height 970.943

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.01	33.33	0	2.01	33.33	26.66
26	0.62	33.50	25	0.65	33.50	26.88
52	1.18	33.82	50	1.20	33.81	27.10
78	1.19	33.94	75	1.20	33.92	27.19
103	5.05	34.69	100	4.50	34.53	27.38
156	6.23	34.90	150	6.20	34.88	27.45
207	4.99	34.82	200	5.10	34.82	27.54
310	4.75	34.90	300	4.75	34.89	27.63
383	4.78	34.94	400	4.75	34.94	27.67
574	3.88	34.88	600	3.85	34.88	27.72
765	3.75	34.89	800	3.70	34.89	27.75
962	3.48	34.865	1,000	3.50	34.87	27.76
1,463	3.50	34.90				

Station 4031; Apr. 13; latitude 43°18′ N., longitude 48°47′ W., depth 2,652 meters, dynamic height 970.938

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	−0.03	33.10	0	−0.03	33.10	26.59
26	−0.15	33.59	25	−0.15	33.56	26.98
52	3.65	34.12	50	3.65	34.07	27.11
78	3.36	34.18	75	3.40	34.17	27.21
103	3.79	34.40	100	3.70	34.58	27.34
156	4.49	34.63	150	4.45	34.61	27.45
208	4.61	34.77	200	4.60	34.76	27.55
311	4.16	34.79	300	4.20	34.79	27.62
421	4.28	34.89	400	4.30	34.87	27.67
628	4.04	34.92	600	4.05	34.92	27.74
833	3.83	34.91	800	3.85	34.91	27.75
1,042	3.71	34.91	1,000	3.75	34.91	27.76
1,562	3.46	34.90				

Station 4032; Apr. 13; latitude 43°03.5′ N., longitude 48°05′ W., depth 3,109 meters, dynamic height 970.932

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.04	35.61	0	4.04	33.61	26.70
27	2.85	33.94	25	2.85	33.73	26.90
53	3.13	34.12	50	3.10	34.09	27.17
80	2.33	34.14	75	2.50	34.13	27.25
106	2.03	34.19	100	2.05	34.17	27.33
160	4.09	34.64	150	3.65	34.55	27.18
214	5.49	94.94	200	5.25	34.92	27.61
320	4.84	34.94	300	4.95	34.94	27.65
424	4.65	34.95	400	4.70	34.95	27.69
635	4.12	34.93	600	4.25	34.93	27.72
846	3.88	34.92	800	3.95	34.92	27.75
1,057	3.53	34.88	1,000	3.60	34.89	27.76
1,581	3.51	34.92				

Station 4033; Apr. 13; latitude 42°51.5′ N., longitude 47°25′ W., depth 3,658 meters, dynamic height 971.084

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	13.19	35.30	0	13.19	35.30	26.61
25	13.91	35.60	25	13.91	35.60	26.69
50	13.77	35.60	50	13.77	35.60	26.72
75	13.61	35.54	75	13.61	35.54	26.71
100	13.55	35.56	100	13.55	35.56	26.73
150	12.79	35.50	150	12.79	35.50	26.85
200	11.36	35.38	200	11.36	35.38	27.02
300	8.69	35.12	300	8.69	35.12	27.28
333	7.18	34.94	400	5.45	34.99	27.63
499	4.70	34.86	600	4.60	35.01	27.75
665	4.54	34.94	800	3.95	35.00	27.81
837	3.82	34.89	1,000	3.75	34.99	27.82
1,277	3.56	34.90				

Station 4034; Apr. 13; latitude 42°36′ N., longitude 46°47′ W., depth 3,749 meters, dynamic height 971.250

Observed values			Scaled values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C	Salinity ‰	σ_t
0	7.93	33.60	0	7.93	33.60	26.21
23	10.03	34.41	25	10.10	34.45	26.53
46	11.36	34.91	50	11.55	35.02	26.71
69	12.82	35.38	75	12.80	35.36	26.73
92	12.32	35.28	100	12.20	35.27	26.78
137	11.93	35.26	150	11.95	35.27	26.83
183	12.10	35.30	200	11.90	35.30	26.86
275	11.02	35.31	300	10.65	35.29	27.08
390	9.23	35.17	400	9.10	35.15	27.24
588	5.15	34.87	600	5.10	34.87	27.58
788	4.86	34.98	800	4.80	34.98	27.70
987	4.38	34.96	1,000	4.35	34.96	27.74
1,488	3.63	34.90				

Station 4035; Apr. 13; latitude 43°02′ N., longitude 46°16′ W., depth 4,382 meters, dynamic height 971.289

Observed values			Scaled values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C	Salinity ‰	σ_t
0	15.21	35.87	0	15.21	35.87	26.62
26	15.18	35.87	25	15.15	35.87	26.62
51	15.07	35.87	50	15.05	35.87	26.64
77	15.10	35.92	75	15.10	35.91	26.67
102	15.64	36.10	100	15.60	36.09	26.70
153	15.25	36.00	150	15.25	36.01	26.72
204	14.50	35.83	200	14.55	35.85	26.74
306	12.22	35.52	300	12.30	35.47	26.92
293	12.15	35.42	400	9.00	35.18	27.28
493	7.01	35.02	600	6.10	35.00	27.56
729	5.38	34.99	800	5.10	34.99	27.67
921	4.71	34.98	1,000	4.60	34.97	27.72
1,419	3.88	34.93				

Station 4036; Apr. 13; latitude 43°28′ N., longitude 45°45′ W., depth 4,489 meters, dynamic height 971.477

Observed values			Scaled values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C	Salinity ‰	σ_t
0	15.50	36.02	0	15.50	36.02	26.67
22	15.46	36.02	25	15.45	36.02	26.67
43	15.45	36.02	50	15.40	36.02	26.69
66	15.41	36.02	75	15.35	36.01	26.69
87	15.16	35.98	100	15.25	36.00	26.71
131	15.40	36.06	150	15.45	36.07	26.71
174	15.50	36.08	200	15.55	36.09	26.71
261	15.66	36.11	300	15.45	36.09	26.73
261	15.61	36.04	400	14.15	35.95	26.91
391	----	35.98	600	9.75	35.21	27.18
522	11.61	35.50	800	6.30	35.02	27.55
652	8.57	35.10	1,000	4.95	34.98	27.68
979	5.04	34.98				

Station 4037; Apr. 14; latitude 43°44.5′ N., longitude 46°22′ W., depth 3,127 meters, dynamic height 971.245

Observed values			Scaled values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C	Salinity ‰	σ_t
0	14.75	35.77	0	14.75	35.77	26.65
29	14.81	35.78	25	14.80	35.78	26.63
58	14.58	35.81	50	14.70	35.80	26.67
86	14.63	35.80	75	14.65	35.80	26.68
114	14.68	35.82	100	14.65	35.80	26.68
172	13.66	35.70	150	14.05	35.75	26.77
230	12.73	35.58	200	13.29	35.64	26.86
344	9.81	35.22	300	11.15	35.39	27.07
358	9.60	35.20	400	8.45	35.11	27.31
536	6.32	35.00	600	5.95	35.00	27.58
712	5.31	35.02	800	4.75	34.98	27.70
903	4.28	34.93	1,000	4.15	34.91	27.72
1,404	3.69	34.90				

Station 4038; Apr. 14; latitude 43°54.5′ N., longitude 47°01′ W., depth 4,024 meters, dynamic height 970.984

Observed Values			Scaled Values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C	Salinity ‰	σ_t
0	4.84	33.65	0	4.84	33.65	26.65
26	0.50	33.42	25	0.50	33.42	26.83
52	0.39	33.60	50	0.35	33.59	26.97
78	1.79	33.87	75	1.50	33.84	27.10
105	2.93	34.12	100	2.70	34.08	27.19
156	4.69	34.52	150	4.55	34.48	27.33
208	4.57	34.60	200	4.55	34.59	27.42
313	4.48	34.78	300	4.45	34.75	27.56
392	4.68	34.89	400	4.70	34.89	27.64
591	4.40	34.94	600	4.35	34.94	27.72
792	4.11	34.94	800	4.10	34.94	27.75
993	3.88	34.93	1,000	3.90	34.93	27.76
1,499	3.61	34.92				

Station 4039; Apr. 14; latitude 44°04′ N., longitude 47°44′ W., depth, 3603 meters, dynamic height 970.994

Observed Values			Scaled Values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C	Salinity ‰	σ_t
0	5.53	33.75	0	5.53	33.75	26.64
22	5.48	33.82	25	5.40	33.83	26.72
44	4.66	34.01	50	4.40	34.00	26.97
67	3.36	33.90	75	3.55	33.95	27.02
89	4.09	34.08	100	4.10	34.11	27.09
134	4.14	34.23	150	4.15	34.30	27.23
178	4.35	34.48	200	4.65	34.60	27.42
267	5.13	34.83	300	5.10	34.87	27.58
347	5.00	34.91	400	4.85	34.94	27.66
525	4.47	34.94	600	4.30	34.93	27.71
706	4.14	34.93	800	4.00	34.92	27.75
885	3.91	34.92	1,000	3.85	34.92	27.76
1,336	3.59	34.91				

Station 4040; Apr. 14; latitude 44°08′ N., longitude 48°18′ W., depth 2,967 meters, dynamic height 970.954

Observed Values			Scaled Values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C	Salinity ‰	σ_t
0	0.30	33.15	0	0.30	33.15	26.62
25	−1.71	33.37	25	−1.71	33.37	26.87
50	1.08	33.73	50	1.08	33.73	27.03
75	3.80	34.18	75	3.80	34.18	27.17
100	2.96	34.20	100	2.96	34.20	27.27
150	4.35	34.54	150	4.35	34.54	27.40
200	5.15	34.78	200	5.15	34.78	27.50
300	4.46	34.84	300	4.46	34.84	27.63
341	4.92	34.94	400	4.85	34.96	27.68
517	4.48	34.96	600	4.15	34.93	27.73
698	3.85	34.90	800	3.80	34.90	27.75
888	3.77	34.90	1,000	3.75	34.90	27.75
1,392	3.63	34.91				

Station 4041; Apr. 15; latitude 44°03.5′ N., longitude 48°34′ W., depth 1,646 meters, dynamic height 970.974

Observed Values			Scaled Values			
Depth, meters	Temperature °C	Salinity ‰	Depth, meters	Temperature °C	Salinity ‰	σ_t
0	−0.56	33.03	0	−0.56	33.03	26.56
27	−0.78	33.12	25	−0.80	33.11	26.63
52	−0.66	33.42	50	−0.70	33.41	26.88
79	−0.26	33.66	75	−0.30	33.62	27.03
104	0.02	33.84	100	−0.05	33.81	27.17
157	2.31	34.32	150	2.15	34.27	27.40
210	2.13	34.42	200	2.15	34.41	27.51
314	2.14	34.52	300	2.15	34.50	27.58
368	2.58	34.62	400	2.80	34.67	27.66
547	3.33	34.79	600	3.40	34.80	27.71
724	3.52	34.83	800	3.55	34.85	27.73
915	3.61	34.87	1,000	3.60	34.87	27.75
1,410	2.55	34.88				

Station 4042; Apr. 15; latitude 44°06′ N., longitude 48°44′ W. depth 709 meters, dynamic height 971.037

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	−0.60	32.98	0	−0.60	32.98	26.52
26	−0.70	33.06	25	−0.70	33.06	26.59
51	−1.70	33.17	50	−1.65	33.17	26.71
76	−1.72	33.27	75	−1.70	33.27	26.79
101	−1.62	33.33	100	−1.65	33.32	26.83
153	−0.61	33.62	150	−0.70	33.60	27.03
204	0.92	34.09	200	0.80	34.05	27.31
305	1.61	34.32	300	1.55	34.31	27.47
415	2.36	34.55	400	2.25	34.52	27.59
			(600)	3.20	34.82	27.75

Station 4043; Apr. 15; latitude 44°07.5′ N., longitude 48°56′ W. depth 182 meters, dynamic height 971.036

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	−0.66	33.09	0	−0.66	33.09	26.61
26	−1.34	33.16	25	−1.30	33.16	26.69
51	−1.58	33.30	50	−1.55	33.30	26.81
78	−1.51	33.34	75	−1.50	33.34	26.85
103	−1.45	33.36	100	−1.45	33.36	26.85
155	−0.41	33.67	150	−0.55	33.64	27.05

Station 4044; Apr. 15; latitude 44°09′ N., longitude 49°04′ W., depth 95 meters, dynamic height 971.037

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	−0.49	33.10	0	−0.49	33.10	26.61
27	−1.19	33.20	25	−1.15	33.19	26.71
52	−1.43	33.29	50	−1.45	33.28	26.79
79	−1.41	33.30	75	−1.40	33.30	26.80

Station 4045; Apr. 15; latitude 44°14.5′ N., longitude 49°19′ W. depth 53 meters, dynamic height 971.042

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	−0.15	33.15	0	−0.15	33.15	26.64
22	−0.19	33.15	25	−0.20	33.05	26.64
38	−0.22	33.16	(50)	−0.25	33.17	26.66

Station 4046; Apr. 15; latitude 44°54.5′ N., longitude 49°23′ W. depth 140 meters, dynamic height 971.083

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	−0.57	33.08	0	−0.57	33.08	26.60
24	−0.77	33.01	25	−0.80	33.11	26.63
48	−1.22	33.20	50	−1.25	33.21	26.73
72	−1.45	33.26	75	−1.45	33.27	26.78
91	−1.47	33.28	100	−1.45	33.28	26.79

Station 4047; Apr. 15; latitude 44°54′ N., longitude 40°12′ W., depth 393 meters, dynamic height 971.084

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	−0.72	33.07	0	−0.72	33.07	26.60
25	−0.84	33.07	25	−0.84	33.07	26.60
50	−1.69	33.24	50	−1.69	33.24	26.77
74	−1.67	33.26	75	−1.65	33.26	26.78
99	−1.63	33.29	100	−1.65	33.29	26.80
148	−0.77	33.56	150	−0.75	33.56	27.00
198	−0.56	33.62	200	−0.55	33.62	27.04
297	0.83	34.06	300	0.85	34.08	27.33

Station 4048; Apr. 15; latitude 44°54′ N., longitude 49°06′ W., depth 1,234 meters, dynamic height 971.051

Observed values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	−0.65	33.06	0	−0.65	33.06	26.59
26	−0.88	33.09	25	−0.85	33.09	26.61
51	−1.68	33.24	50	−1.65	33.24	26.76
76	−1.76	33.31	75	−1.75	33.31	26.82
101	−1.56	33.41	100	−1.60	33.41	26.91
152	−0.64	33.61	150	−0.65	33.61	27.04
203	0.11	33.80	200	0.05	33.79	27.15
304	1.39	34.27	300	1.35	34.25	27.44
409	2.67	34.64	400	2.60	34.62	27.64
614	3.29	34.79	600	3.25	34.78	27.70
820	3.47	34.83	800	3.45	34.83	27.72
1,028	3.48	34.85	1,000	3.50	34.85	27.74
1,340	3.45	34.84				

Station 4049; Apr. 15; latitude 44°51.5′ N., longitude 48°51′ W., depth 1,586 meters, dynamic height 970.928

Observed values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.41	33.10	0	0.41	33.10	26.57
25	0.09	33.16	25	0.09	33.16	26.64
49	−0.52	33.68	50	−0.50	33.69	27.09
73	0.02	33.92	75	0.10	33.93	27.25
97	0.74	34.10	100	0.75	34.12	27.38
147	1.52	34.36	150	1.55	34.37	27.52
196	2.84	34.61	200	2.90	34.63	27.62
293	4.18	34.84	300	4.20	34.84	27.66
351	4.13	34.87	400	4.10	34.89	27.71
540	4.09	34.91	600	4.05	34.90	27.72
740	3.55	34.86	800	3.60	34.87	27.75
938	3.71	34.90	1,000	3.70	34.90	27.76
1,406	3.44	34.88				

Station 4050; Apr. 15–16; latitude 44°49′ N., longitude 48°33′ W., depth 2,514 meters, dynamic height 970.927

Observed values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.17	33.14	0	0.17	33.14	26.62
28	−0.55	33.30	25	−0.50	33.28	26.76
55	−0.65	33.60	50	−0.65	33.55	26.99
82	0.03	33.88	75	−0.20	33.81	27.18
109	0.81	34.12	100	0.55	34.04	27.32
164	2.73	34.54	150	2.30	34.45	27.53
219	2.86	34.61	200	2.85	34.59	27.59
328	2.83	34.68	300	2.75	34.65	27.65
305	2.75	34.65	400	3.35	34.79	27.70
470	3.88	34.86	600	3.65	34.87	27.74
642	3.62	34.87	800	3.50	34.86	27.75
868	3.50	34.86	1,000	3.50	34.87	27.76
1,548	3.48	34.89				

Station 4051; Apr. 16; latitude 44°41.5′ N., longitude 47°50′ W., depth 3,383 meters, dynamic height 971.120

Observed values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	12.49	35.46	0	12.49	35.46	26.88
27	12.51	35.46	25	12.50	35.46	26.87
53	12.52	35.47	50	12.50	35.47	26.88
80	12.50	35.465	75	12.50	35.47	26.88
106	12.53	35.47	100	12.50	35.47	26.88
160	10.24	35.04	150	10.60	35.10	26.94
213	9.29	35.01	200	9.45	35.01	27.07
319	8.32	35.02	300	8.45	35.02	27.24
421	5.94	34.95	400	6.50	34.96	27.48
634	4.84	34.97	600	4.95	34.97	27.68
842	4.27	34.94	800	4.35	34.95	27.73
1,051	3.93	34.92	1,000	4.00	34.92	27.75
1,574	3.56	34.91				

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STATIONS OCCUPIED IN 1950—Continued

Station 4052; Apr. 16; latitude 44°38′ N., longitude 47°23′ W., depth 3,695 meters, dynamic height 971.108

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	12.58	35.49	0	12.58	35.49	26.88
22	12.60	35.49	25	12.58	35.49	26.88
43	12.59	35.49	50	12.57	35.49	26.88
66	12.61	35.495	75	12.61	35.49	26.87
87	12.60	35.49	100	12.15	35.38	26.87
131	10.65	35.08	150	9.75	34.90	26.93
174	8.69	34.71	200	7.90	34.72	27.09
409	5.80	34.86	300	6.60	34.79	27.33
616	4.88	34.96	400	5.85	34.85	27.47
828	4.11	34.92	600	4.90	34.96	27.68
1,032	3.81	34.90	800	4.20	34.93	27.73
1,534	3.47	34.90	1,000	3.85	34.90	27.74

Station 4053; Apr. 16; latitude 44°33′ N., longitude 46°42′ W., depth 3,731 meters, dynamic height 971.207

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.33	33.78	0	8.33	33.78	26.29
23	14.28	35.67	25	14.25	35.67	26.67
46	14.18	35.67	50	14.15	35.67	26.69
69	14.04	35.68	75	14.05	35.69	26.72
92	14.12	35.71	100	14.05	35.71	26.74
138	13.71	35.66	150	13.60	35.66	26.80
184	13.22	35.67	200	12.80	35.64	26.95
276	10.27	35.26	300	9.75	35.21	27.18
375	8.23	35.08	400	7.75	35.04	27.36
565	4.76	34.80	600	4.70	34.82	27.59
760	4.39	34.92	800	4.30	34.92	27.71
955	3.95	34.90	1,000	3.95	34.90	27.73
1,454	3.79	34.94				

Station 4054; Apr. 16; latitude 44°26′ N., longitude 46°02′ W., depth 3,695 meters, dynamic height 971.263

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	14.87	35.84	0	14.87	35.84	26.67
27	14.91	35.83	25	14.90	35.83	26.65
54	14.93	35.84	50	14.90	35.83	26.65
81	14.88	35.84	75	14.90	35.84	26.66
107	14.89	35.86	100	14.90	35.85	26.67
162	14.42	35.81	150	14.55	35.82	26.72
215	13.82	35.73	200	14.00	35.76	26.79
322	11.12	35.38	300	11.70	35.45	27.02
310	10.97	35.38	400	8.75	35.11	27.27
447	7.76	35.00	600	5.75	34.99	27.59
573	6.01	35.00	800	4.60	34.94	27.69
722	4.85	34.94	1,000	4.20	34.92	27.73
1,102	4.03	34.92				

Station 4055; Apr. 16; latitude 44°16′ N., longitude 45°13′ W., depth 4,207 meters, dynamic height 971.198

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	5.90	33.17	0	5.90	33.17	26.14
28	13.54	35.52	25	12.20	35.15	26.69
55	13.73	35.63	50	13.70	35.62	26.75
83	12.10	35.26	75	12.60	35.36	26.77
110	11.73	35.21	100	11.85	35.23	26.81
166	8.94	34.83	150	9.60	34.94	26.99
221	8.06	34.68	200	8.25	34.71	27.03
331	8.88	34.98	300	8.65	34.90	27.11
430	7.62	35.00	400	8.10	35.00	27.28
643	4.65	34.90	600	5.10	34.92	27.62
856	3.92	34.88	800	4.05	34.89	27.71
1,069	3.62	34.86	1,000	3.65	34.86	27.73
1,602	3.66	34.92				

Station 4056; Apr. 17; latitude 44°50′ N., longitude 45°13′ W., depth 4,436 meters, dynamic height 971.030

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.17	33.71	0	6.17	33.71	26.54
24	9.82	34.83	25	9.85	34.84	26.87
48	10.61	35.07	50	10.60	35.07	26.92
72	9.40	34.86	75	9.10	34.83	26.98
97	5.88	34.29	100	5.80	34.29	27.04
145	5.35	34.34	150	5.35	34.37	27.16
194	6.98	34.77	200	6.90	34.78	27.28
290	5.73	34.85	300	5.90	34.82	27.45
294	5.26	34.78	400	4.60	34.82	27.60
436	4.46	34.82	600	4.30	34.92	27.71
574	4.34	34.92	800	4.00	34.92	27.75
733	4.14	34.93	1,000	3.60	34.90	27.77
1,159	3.27	34.88				

Station 4057; Apr. 17; latitude 45°21′ N., longitude 45°12′ W., depth 4,463 meters, dynamic height 971.036

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	9.14	34.48	0	9.14	34.48	26.71
25	8.46	34.49	25	8.46	34.49	26.82
49	10.41	35.02	50	10.40	35.02	26.92
71	9.38	34.84	75	9.20	34.83	26.97
98	5.37	34.19	100	5.30	34.19	27.02
148	4.70	34.30	150	4.70	34.31	27.18
198	5.00	34.35	200	5.00	34.36	27.19
296	4.61	34.64	300	4.85	34.66	27.45
298	5.10	34.68	400	5.05	34.87	27.59
441	5.05	34.93	600	4.50	34.97	27.73
583	4.56	34.97	800	3.80	34.89	27.74
748	3.85	34.89	1,000	3.75	34.90	27.75
1,192	3.69	34.91				

Station 4058; Apr. 17; latitude 45°22.5′ N., longitude 45°54′ W., depth 3,548 meters, dynamic height 970.989

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	7.14	34.42	0	7.14	34.42	26.96
26	8.20	34.68	25	8.20	34.67	27.01
51	8.08	34.72	50	8.10	34.72	27.06
77	7.20	34.64	75	7.20	34.65	27.14
102	7.04	34.67	100	7.10	34.67	27.17
152	5.74	34.54	150	5.75	34.54	27.24
203	6.31	34.76	200	6.30	34.75	27.34
305	4.79	34.78	300	4.80	34.78	27.54
411	5.35	35.01	400	5.30	35.00	27.66
616	4.25	34.92	600	4.30	34.93	27.71
820	3.90	34.90	800	3.95	34.90	27.73
1,025	3.60	34.89	1,000	3.60	34.89	27.76
1,538	3.48	34.90				

Station 4059; Apr. 17; latitude 45°23′ N., longitude 46°32′ W., depth 3,292 meters, dynamic height 970.972

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	−0.25	33.02	0	−0.25	33.02	26.54
25	−1.57	33.22	25	−1.57	33.22	26.75
50	2.53	33.86	50	2.53	33.86	27.03
75	4.41	34.19	75	4.41	34.19	27.12
101	4.26	34.25	100	4.25	34.24	27.17
151	4.48	34.48	150	4.45	34.48	27.34
201	4.62	34.59	200	4.60	34.59	27.41
302	4.24	34.75	300	4.25	34.74	27.57
399	4.48	34.92	400	4.45	34.92	27.70
596	3.71	34.86	600	3.70	34.86	27.73
790	3.85	34.91	800	3.85	34.91	27.75
989	3.71	34.90	1,000	3.70	34.90	27.76
1,487	3.45	34.87				

STATIONS OCCUPIED IN 1950—Continued

Station 4060; Apr. 18; latitude 45°02.5′ N., longitude 46°35′ W. depth 3,467 meters, dynamic height 971.060

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	------	34.96	(0)	10.6	34.94	26.82
18	------	34.96	(25)	10.6	34.94	26.82
36	------	34.94	(50)	10.6	34.94	26.82
54	------	34.92	(75)	10.6	34.94	26.82
73	------	34.93	(100)	10.6	34.94	26.82
109	------	34.94	(150)	7.75	34.75	27.13
145	------	34.83	200	5.25	34.33	27.13
218	6.43	34.65	300	6.30	34.84	27.41
189	4.64	34.18	400	4.70	34.83	27.59
286	6.50	34.84	600	4.30	34.94	27.72
385	4.83	34.82	(800)	4.10	34.94	27.75
481	4.44	34.93	(1,000)	3.90	34.93	27.76
722	4.12	34.94				

Station 4061; Apr. 18-19; latitude 45°29′ N., longitude 47°33′ W. depth 1,948 meters, dynamic height 971.010

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	−1.18	33.07	0	−1.18	33.07	26.62
27	−1.18	33.10	25	−1.20	33.10	26.64
54	1.49	33.54	50	1.05	33.42	26.80
81	4.07	34.27	75	4.35	34.19	27.12
108	4.10	34.18	100	4.40	34.20	27.13
163	5.28	34.48	150	5.00	34.42	27.24
216	5.49	34.65	200	5.45	34.60	27.32
324	5.00	34.84	300	5.10	34.80	27.53
418	4.71	34.94	400	4.75	34.93	27.66
609	4.09	34.89	600	4.30	34.89	27.68
790	3.96	34.92	800	3.90	34.92	27.76
985	3.50	34.89	1,000	3.50	34.89	27.77
1,472	3.45	34.87				

Station 4062; Apr. 19; latitude 45°35′ N., longitude 47°40′ W., depth 1,550 meters, dynamic height 971.004

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	−1.13	33.12	0	−1.13	33.12	26.65
25	−1.14	33.42	25	−1.14	33.13	26.66
51	−1.46	33.20	50	−1.45	33.20	26.73
76	−1.73	33.41	75	−1.75	33.40	26.90
102	−1.58	33.61	100	−1.60	33.60	27.06
152	−0.62	33.35	150	−0.70	33.91	27.28
202	0.83	34.15	200	0.75	34.14	27.39
304	1.64	34.44	300	1.60	34.43	27.56
387	2.28	34.56	400	2.35	34.58	27.62
582	3.12	34.76	600	3.15	34.77	27.71
779	3.44	34.82	800	3.45	34.82	27.72
982	3.50	34.85	1,000	3.50	34.85	27.74
1,440	3.13	34.85				

Station 4063; Apr. 19; latitude 45°47′ N., longitude 47°59′ W, depth 654 meters, dynamic height 971.062

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	−1.09	33.05	0	−1.09	33.05	26.59
24	−1.11	33.04	25	−1.10	33.04	26.59
49	−1.29	33.08	50	−1.30	33.08	26.62
74	−1.77	33.25	75	−1.75	33.25	26.78
99	−1.72	33.33	100	−1.70	33.33	26.84
147	−1.25	33.48	150	−1.25	33.49	26.96
197	−0.17	33.70	200	−0.10	33.77	27.14
296	4.35	34.57	300	4.35	34.57	27.43
347	1.92	34.46	400	2.15	34.54	27.61
554	3.18	34.78	(600)	3.40	34.83	27.73

Station 4064; Apr. 19; latitude 45°51′ N., longitude 48°06′ W., depth 170 meters, dynamie height 971.073

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	−0.70	33.04	0	−0.70	33.04	26.58
25	−0.73	33.04	25	−0.73	33.04	26.58
49	−1.43	33.13	50	−1.45	33.13	26.67
74	−1.73	33.26	75	−1.75	33.26	26.79
99	−1.56	33.32	100	−1.55	33.32	26.83
148	−1.32	33.39	150	−1.30	33.39	26.88

Station 4065; Apr. 19; latitude 45°54.5′ N., longitude 48°12′ W., depth 112 meters, dynamic height 971.074

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	−0.66	33.03	0	−0.66	33.03	26.57
26	−0.69	33.03	25	−0.70	33.03	26.57
51	−1.71	33.18	50	−1.70	33.17	26.71
77	−1.70	33.27	75	−1.70	33.26	26.78
103	−1.59	33.29	100	−1.60	33.29	26.80

Station 4066; Apr. 19; latitude 46°00.5′ N., longitude 48°22′ W., depth 88 meters, dynamic height 971.079

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	−0.32	33.03	0	−0.32	33.03	26.55
28	−0.37	33.04	25	−0.35	33.04	26.56
54	−0.80	33.07	50	−0.75	33.06	26.59
82	−1.60	33.24	75	−1.45	33.19	26.72

Station 4067; Apr. 19; latitude 46°10.5′ N., longitude 48°38′ W., depth 77 meters, dynamie height 971.082

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	−0.07	32.93	0	−0.07	32.93	26.46
25	−0.14	32.96	25	−0.14	32.96	26.49
50	−0.80	33.11	50	−0.80	33.11	26.63
75	−1.11	33.14	75	−1.11	33.14	26.67

Station 4068; Apr. 19; latitude 46°20.5′ N., longitude 48°55′ W., depth 60 meters, dynamic height 971.093

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	−0.28	32.79	0	−0.28	32.79	26.36
27	−0.32	32.80	25	−0.30	32.80	26.37
43	−0.53	32.86	(50)	−0.65	32.88	26.45

Station 4069; May 2; latitude 42°00′ N., longitude 51°58′ W., depth 3,841 meters, dynamic height 971.072

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.84	33.45	0	5.84	33.45	26.37
23	5.83	33.46	25	5.80	33.46	26.38
47	3.13	33.38	50	3.10	33.58	26.60
70	3.07	33.86	75	3.20	33.95	27.05
93	4.65	34.19	100	4.55	34.18	27.09
140	3.88	34.07	150	4.15	34.13	27.10
187	5.53	34.49	200	5.35	34.48	27.24
280	3.90	34.42	300	3.90	34.46	27.39
380	4.01	34.68	400	4.10	34.73	27.58
574	5.09	35.01	600	5.00	35.00	27.70
769	4.05	34.90	800	4.05	34.90	27.72
964	4.17	34.95	1,000	4.15	34.95	27.75
1,458	3.65	34.91				

Station 4070; May 2; latitude 42°00′ N., longitude 50°58′ W., depth 3,282 meters, dynamic height 970.933

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.19	33.45	0	3.19	33.45	26.65
23	2.69	33.61	25	2.65	33.63	26.84
46	2.02	33.91	50	2.05	33.96	27.16
69	2.82	34.10	75	2.80	34.14	27.24
92	2.81	34.20	100	2.70	34.21	27.30
138	1.94	34.32	150	2.05	34.36	27.48
185	2.51	34.50	200	2.70	34.57	27.59
277	3.47	34.74	300	3.30	34.74	27.67
320	3.19	34.74	400	3.30	34.77	27.70
490	3.47	34.81	600	3.55	34.84	27.72
666	3.55	34.84	800	3.55	34.84	27.72
818	3.52	34.84	1,000	3.55	34.85	27.73
1,176	3.53	34.86				

Station 4071; May 3; latitude 42°21.5′ N., longitude 51°30′ W., depth 2,908 meters, dynamic height 971.106

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.40	33.00	0	1.40	33.00	26.44
21	1.31	33.02	25	1.05	33.04	26.50
41	−0.50	33.16	50	−1.05	33.23	26.74
62	−1.51	33.30	75	−1.50	33.34	26.85
82	−1.47	33.37	100	−1.35	33.42	26.91
123	−1.15	33.47	150	−0.90	33.54	26.99
164	−0.80	33.58	200	−0.35	33.69	27.08
246	0.20	33.84	300	0.45	33.91	27.22
309	0.51	33.92	400	2.50	34.45	27.51
473	4.02	34.82	600	3.85	34.83	27.68
645	3.83	34.83	800	3.80	34.85	27.71
855	3.77	34.87	1,000	3.50	34.89	27.77
1,470	3.25	34.90				

Station 4072; May 3; latitude 42°42′ N., longitude 51°05′ W., depth 1,756 meters, dynamic height 971.090

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.36	33.10	0	3.36	33.10	26.35
24	3.21	33.11	25	3.20	33.11	26.38
47	2.70	33.10	50	2.35	33.10	26.44
71	0.00	33.14	75	−0.35	33.15	26.64
91	−1.44	33.26	100	−1.45	33.28	26.79
143	−1.34	33.42	150	−0.90	33.49	26.95
190	2.71	33.92	200	2.75	33.98	27.11
284	2.84	34.33	300	3.00	34.41	27.44
360	4.47	34.76	400	4.20	34.76	27.60
540	3.34	34.78	600	3.40	34.79	27.70
721	3.59	34.84	800	3.60	34.86	27.74
915	3.57	34.87	1,000	3.60	34.87	27.75
1,424	3.61	34.89				

Station 4073; May 3; latitude 42°49′ N., longitude 50°54′ W., depth 1,074 meters, dynamic height 971.086

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.39	32.91	0	2.39	32.91	26.29
26	2.17	32.94	25	2.20	32.94	26.33
51	−0.21	33.11	50	−0.20	33.10	26.60
77	−0.77	33.19	75	−0.80	33.18	26.69
102	−0.19	33.41	100	−0.20	33.40	26.85
153	−0.66	33.59	150	−0.65	33.57	27.01
204	0.52	33.88	200	0.40	33.85	27.18
306	3.13	34.46	300	3.10	34.45	27.46
358	2.89	34.52	400	3.00	34.58	27.57
544	3.41	34.76	600	3.50	34.79	27.69
734	3.62	34.82	800	3.60	34.83	27.71
935	3.56	34.84	(1,000)	3.55	34.85	27.73

Station 4074; May 3; latitude 42°53.5′ N., longitude 50°47′ W., depth 640 meters, dynamic height 971.080

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.10	32.65	0	3.10	32.65	26.03
27	2.81	32.71	25	2.85	32.70	26.08
53	−0.22	33.12	50	−0.10	33.08	26.58
80	0.08	33.23	75	−0.05	33.20	26.68
106	6.55	34.45	100	6.50	34.36	27.00
160	6.22	34.49	150	6.30	34.49	27.13
213	4.51	34.34	200	4.95	34.37	27.21
319	3.13	34.46	300	3.20	34.43	27.43
410	3.04	34.67	400	3.05	34.65	27.62
608	3.49	34.80	600	3.50	34.80	27.70

Station 4075; May 3; latitude 42°58′ N., longitude 50°41′ W., depth 162 meters, dynamic height 971.097

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.11	32.71	0	3.11	32.71	26.07
26	2.80	32.77	25	2.85	32.76	26.13
52	0.90	33.03	50	1.30	33.01	26.46
78	−1.09	33.30	75	−1.05	33.28	26.78
103	−0.79	33.48	100	−0.85	33.46	26.92
154	−0.20	33.70	150	−0.25	33.69	27.08

Station 4076; May 3; latitude 43°52′ N., longitude 50°34′ W., depth 91 meters, dynamic height 971.095

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.96	32.71	0	2.96	32.71	26.08
26	2.83	32.73	25	2.85	32.73	26.11
51	0.19	33.06	50	0.25	33.04	26.54
77	−0.96	33.35	75	−0.95	33.34	26.83

Station 4077; May 3; latitude 43°20′ N., longitude 50°13′ W., depth 70 meters, dynamic height 971.097

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.50	32.75	0	2.50	32.75	26.15
26	2.45	32.76	25	2.45	32.75	26.15
52	0.38	33.02	50	0.50	33.01	26.50

Station 4078; May 3; latitude 42°59′ N., longitude 50°12′ W., depth 94 meters, dynamic height 971.088

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.67	32.78	0	2.67	32.78	26.17
26	1.40	32.97	25	1.50	32.96	26.39
50	−0.50	33.19	50	−0.50	33.19	26.69
76	−1.03	33.33	75	−1.05	33.32	26.81

Station 4079; May 3; latitude 42°45′ N., longitude 50°13′ W., depth 432 meters, dynamic height 971.081

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.87	32.94	0	1.87	32.94	26.36
21	1.68	32.96	25	1.40	32.98	26.42
43	−0.10	33.07	50	−0.25	33.10	26.60
64	−0.53	33.16	75	−0.75	33.21	26.72
86	−1.03	33.25	100	−1.05	33.33	26.82
128	−1.08	33.47	150	−0.65	33.58	27.01
170	−0.12	33.68	200	0.60	33.88	27.18
256	1.89	34.36	(300)	2.65	34.72	27.72

STATIONS OCCUPIED IN 1950—Continued

Station 4080; May 3–4; latitude 42°34.5′ N., longitude 50°15′ W., depth 1,920 meters, dynamic height 971.035

Observed values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.21	32.90	0	2.21	32.90	26.29
23	0.54	33.04	25	0.30	33.06	26.55
46	−1.23	33.27	50	−1.30	33.29	26.79
69	−1.45	33.26	75	−1.45	33.40	26.89
92	−1.02	33.51	100	−0.55	33.59	27.01
138	1.60	33.93	150	1.60	33.98	27.20
184	1.63	34.07	200	1.80	34.03	27.23
276	2.73	34.43	300	2.60	34.46	26.51
366	2.28	34.52	400	2.60	34.59	27.61
548	3.96	34.86	600	3.95	34.87	27.71
731	3.85	34.88	800	3.90	34.90	27.74
919	3.97	34.92	1,000	3.95	34.92	27.75
1,401	3.96	34.90				

Station 4081; May 4; latitude 42°10′ N., longitude 50°18′ W., depth 3,296 meters, dynamic height 970.957

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.76	33.57	0	3.76	33.57	26.70
25	3.66	33.58	25	3.66	33.58	26.71
50	2.85	33.96	50	2.85	33.96	27.09
75	3.24	34.14	75	3.24	34.14	27.19
100	2.31	34.12	100	2.31	34.12	27.27
150	3.03	34.37	150	3.03	34.37	27.40
200	3.04	34.49	200	3.04	34.49	27.49
300	4.06	34.77	300	4.06	34.77	27.62
407	4.58	34.92	400	4.55	34.91	27.68
609	4.26	34.94	600	4.30	34.94	27.72
813	4.05	34.94	800	4.05	34.94	27.75
1,019	3.63	34.89	1,000	3.65	34.89	27.75
1,540	3.56	34.92				

Station 4082; May 4; latitude 41°49.5′ N., longitude 50°16′ W., depth 3,713 meters, dynamic height 970.972

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.00	33.17	0	2.00	33.17	26.53
27	0.52	33.22	25	0.55	33.21	26.66
52	2.61	33.75	50	2.40	33.69	26.91
79	3.68	34.10	75	3.60	34.08	27.11
104	2.36	34.04	100	2.45	34.05	27.19
157	2.99	34.38	150	2.95	34.36	27.40
210	2.76	34.46	200	2.70	34.45	27.49
314	3.19	34.62	300	3.05	34.61	27.59
348	2.92	34.62	400	3.30	34.72	27.66
526	4.43	34.94	600	4.40	34.95	27.72
708	4.30	34.96	800	4.20	34.96	27.76
900	4.14	34.96	1,000	4.05	34.95	27.76
1,404	3.56	34.91				

Station 4083; May 4; latitude 41°35′ N., longitude 50°12′ W., depth 3,741 meters, dynamic height 971.111

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	5.41	33.17	0	5.41	33.17	26.20
25	5.05	33.17	25	5.05	33.17	26.24
50	9.55	34.50	50	9.55	34.50	26.66
75	12.18	35.28	75	12.15	35.28	26.80
386	4.16	34.62	100	12.70	35.47	26.84
578	4.86	34.95	150	11.90	35.49	27.01
769	4.48	34.96	200	10.65	35.35	27.13
964	3.93	34.92	300	6.45	34.97	27.49
1,455	3.76	34.94	400	4.20	34.64	27.50
			600	4.85	34.95	27.67
			800	4.35	34.96	27.74
			1,000	3.90	34.92	27.76

Station 4084; May 4; latitude 40°58′ N., longitude 50°04′ W., depth 3,566 meters, dynamic height 971.301

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	15.22	34.87	0	15.22	34.87	25.85
27	14.01	35.44	25	14.05	35.40	26.50
54	14.68	35.71	50	14.60	35.71	26.62
81	14.54	35.69	75	14.60	35.70	26.61
107	13.62	35.55	100	13.75	35.52	26.66
162	13.34	35.53	150	13.40	35.54	26.75
215	12.51	35.38	200	12.70	35.42	26.80
322	11.96	35.51	300	12.10	35.50	26.98
476	8.18	35.08	400	10.35	35.31	27.15
634	4.60	34.76	600	4.85	34.80	27.55
797	4.39	34.88	800	4.40	34.88	27.66
1,216	3.83	34.91	1,000	4.10	35.00	27.80

Station 4085; May 5; latitude 42°01′ N., longitude 49°25′ W., depth 2,926 meters, dynamic height 970.960

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.07	33.27	0	4.07	33.27	26.42
27	3.57	33.43	25	3.60	33.42	26.60
53	1.64	33.72	50	1.65	33.69	26.97
80	2.68	34.05	75	2.55	34.00	27.15
105	2.29	34.15	100	2.40	34.13	27.26
159	2.88	34.40	150	2.75	34.35	27.41
212	5.21	34.85	200	4.90	34.80	27.55
317	4.60	34.86	300	4.65	34.86	27.63
419	4.54	34.92	400	4.60	34.91	27.67
628	4.07	34.92	600	4.10	34.92	27.74
839	4.08	34.94	800	4.10	34.94	27.75
1,049	3.68	34.91	1,000	3.75	34.91	27.76
1,576	3.55	34.94				

Station 4086; May 5; latitude 41°28′ N., longitude 48°48′ W., depth 3,333 meters, dynamic height 971.197

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	14.23	35.49	0	14.23	35.49	26.54
25	15.38	35.90	25	15.38	35.90	26.60
50	15.16	35.84	50	15.16	35.84	26.60
75	14.13	35.64	75	14.13	35.64	26.67
100	13.70	35.59	100	13.70	35.59	26.72
149	13.00	35.50	150	13.00	35.50	26.80
200	12.91	35.56	200	12.91	35.56	26.87
300	9.42	35.17	300	9.42	35.17	27.21
403	7.67	35.08	400	7.75	35.08	27.39
600	5.47	35.00	600	5.47	35.00	27.64
794	4.58	34.97	800	4.55	34.97	27.73
1,000	4.15	34.94	1,000	4.15	34.94	27.74
1,505	3.69	34.92				

Station 4087; May 5; latitude 41°51′ N., longitude 47°46′ W., depth 3,749 meters, dynamic height 971.307

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	15.51	35.96	0	15.51	35.96	26.62
25	15.47	35.96	25	15.47	35.96	26.62
51	15.49	35.97	50	15.49	35.96	26.62
75	15.52	35.96	75	15.52	35.96	26.61
101	15.49	35.97	100	15.50	35.97	26.63
151	13.85	35.65	150	13.85	35.65	26.74
202	13.43	35.60	200	13.45	35.60	26.78
303	12.69	35.61	300	12.75	35.61	26.94
406	9.58	35.18	400	9.75	35.20	27.17
606	6.17	34.98	600	6.25	34.98	27.52
804	4.69	34.94	800	4.70	34.91	27.68
1,007	4.31	34.95	1,000	4.30	34.95	27.73
1,517	3.72	34.92				

STATIONS OCCUPIED IN 1950—Continued

Station 4088; May 5; latitude 42°17′ N., longitude 48°26 W., depth 3,388 meters, dynamic height 971.070

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	5.21	32.97	0	5.21	32.97	26.07
25	4.72	33.19	25	4.72	33.19	26.30
50	5.51	33.80	50	5.51	33.80	26.69
75	10.90	35.14	75	10.90	35.14	26.92
100	9.36	34.90	100	9.36	34.90	27.00
150	8.77	34.98	150	8.77	34.98	27.16
200	7.18	34.81	200	7.18	34.81	27.27
300	6.52	34.96	300	6.52	34.96	27.47
382	5.20	34.86	400	5.15	34.87	27.58
575	4.88	34.98	600	4.80	34.98	27.70
768	4.35	34.96	800	4.25	34.95	27.74
963	3.98	34.92	1,000	3.95	34.92	27.75
1,458	3.65	34.94				

Station 4089; May 5; latitude 42°42′ N., longitude 49°12′ W., depth 2,588 meters, dynamic height 970.947

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.28	33.40	0	3.28	33.40	26.61
24	3.29	33.58	25	3.25	33.59	26.76
48	2.44	33.87	50	2.35	33.88	27.06
71	1.80	33.96	75	1.80	33.98	27.19
95	2.21	34.10	100	2.20	34.12	27.28
142	2.41	34.31	150	2.60	34.35	27.42
190	3.83	34.64	200	3.90	34.67	27.56
285	4.09	34.80	300	4.10	34.81	27.65
361	4.07	34.84	400	4.00	34.84	27.68
547	3.79	34.86	600	3.85	34.88	27.72
738	4.07	34.93	800	4.00	34.93	27.75
930	3.88	34.92	1,000	3.80	34.91	27.76
1,424	3.48	34.90				

Station 4090; May 6; latitude 43°17.5′ N., longitude 48°50′ W., depth 2,232 meters, dynamic height 970.942

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.89	33.29	0	1.89	33.29	26.63
26	1.88	33.30	25	1.90	33.30	26.64
50	1.20	33.65	50	1.20	33.65	26.97
76	0.81	33.90	75	0.80	33.89	27.18
100	1.68	34.20	100	1.68	34.20	27.37
152	3.76	34.58	150	3.75	34.58	27.49
202	2.67	34.55	200	2.70	34.55	27.57
302	4.43	34.86	300	4.40	34.86	27.65
425	4.64	34.94	400	4.60	34.91	27.69
632	4.09	34.92	600	4.15	34.92	27.73
837	3.82	34.90	800	3.85	34.91	27.75
1,048	3.55	34.88	1,000	3.60	34.88	27.75
1,579	3.45	34.91				

Station 4091; May 6; latitude 43°00′ N., longitude 48°10′ W., depth 3,292 meters, dynamic height 970.991

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.95	33.84	0	4.95	33.84	26.78
26	4.94	33.84	25	4.95	33.84	26.78
51	5.02	33.86	50	5.00	33.86	26.80
76	4.99	34.20	75	5.00	34.20	27.06
101	4.95	34.31	100	4.95	34.30	27.15
153	5.04	34.53	150	5.05	34.52	27.31
204	5.06	34.62	200	5.05	34.61	27.38
305	5.13	34.88	300	5.10	34.87	27.58
331	4.97	34.88	400	4.65	34.89	27.65
509	4.37	34.90	600	4.25	34.93	27.72
696	4.12	34.94	800	3.95	34.92	27.75
910	3.81	34.90	1,000	3.75	34.90	27.75
1,514	3.55	34.92				

Station 4092; May 6; latitude 42°44′ N., longitude 47°35′ W., depth 3,676 meters, dynamic height 970.985

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.46	33.64	0	4.46	33.64	26.68
22	4.41	33.64	25	4.40	33.64	26.69
43	4.76	33.77	50	4.70	33.84	26.81
66	4.08	34.04	75	4.05	34.12	27.11
87	4.09	34.21	100	4.20	34.29	27.22
131	4.51	34.46	150	4.60	34.53	27.36
359	4.91	34.91	200	4.75	34.68	27.47
547	4.43	34.92	300	4.90	34.86	27.60
744	4.15	34.93	400	4.85	34.91	27.64
940	3.90	34.92	600	4.35	34.92	27.71
1,446	3.64	34.92	800	4.05	34.93	27.74
			1,000	3.85	34.92	27.76

Station 4093; May 6; latitude 42°41′ N., longitude 46°58′ W., depth 3,841 meters, dynamic height 971.163

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	13.20	35.32	0	13.20	35.32	26.63
25	13.26	35.32	25	13.26	35.32	26.61
48	13.71	35.46	50	13.70	35.47	26.64
73	13.64	35.55	75	13.60	35.55	26.72
97	13.27	35.47	100	13.20	35.47	26.74
146	12.52	35.45	150	12.50	35.46	26.87
195	12.44	35.50	200	12.40	35.49	26.91
292	9.61	35.20	300	9.40	35.18	27.21
373	7.37	34.96	400	6.95	34.96	27.42
559	5.35	34.97	(600)	5.00	34.97	27.68
			(800)	4.00	34.94	27.76
			(1,000)	3.90	34.92	27.76

Station 4094; May 7, latitude 43°08′ N., longitude 46°42′ W., depth 4,024 meters, dynamic height 971,242

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	14.36	35.83	0	14.36	35.83	26.77
23	14.39	35.83	25	14.40	35.83	26.76
45	14.44	35.84	50	14.40	35.83	26.76
68	14.44	35.83	75	14.45	35.84	26.76
90	14.42	35.83	100	14.40	35.83	26.76
136	14.40	35.84	150	14.40	35.83	26.76
181	14.44	35.83	200	14.25	35.82	26.78
271	12.22	35.50	300	11.35	35.38	27.02
390	8.76	35.07	400	8.50	35.05	27.26
598	5.22	34.91	600	5.20	34.91	27.60
816	4.15	34.88	800	4.15	34.88	27.69
1,026	4.08	34.94	1,000	4.10	34.94	27.75
1,556	3.65	34.90				

Station 4095; May 7; latitude 43°23′ N., longitude 46°04′ W., depth 4,572 meters, dynamic height 971.361

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	14.50	35.81	0	14.50	35.81	26.74
25	14.54	35.81	25	14.54	35.81	26.71
50	14.55	35.81	50	14.55	35.81	26.71
75	14.53	35.81	75	14.53	35.81	26.71
100	14.37	35.79	100	14.37	35.79	26.74
150	14.35	35.80	150	14.35	35.80	26.75
200	14.12	35.80	200	14.12	35.80	26.80
300	13.57	35.68	300	13.57	35.68	26.81
371	12.11	35.46	400	11.40	35.38	27.62
555	8.00	35.06	600	7.20	35.02	27.43
737	5.50	34.96	800	5.10	34.94	27.63
925	4.57	34.93	1,000	4.40	34.93	27.70
14,05	3.97	34.94				

Station 4096; May 7; latitude 43°35′ N., longitude 46°38′ W., depth 4,390 meters, dynamic height 971.166

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	14.04	35.66	0	14.04	35.66	26.71
26	14.53	35.72	25	14.50	35.72	26.65
51	14.48	35.81	50	14.45	35.81	26.74
78	14.43	35.80	75	14.45	35.81	26.74
103	13.67	35.62	100	13.75	35.63	26.74
155	13.02	35.54	150	13.10	35.55	26.82
206	12.36	35.51	200	12.45	35.52	26.92
309	8.01	34.90	300	9.00	35.08	27.20
294	10.00	35.26	400	4.80	34.66	27.45
437	4.14	34.60	600	5.05	34.95	27.65
579	5.13	34.95	800	4.05	34.92	27.74
743	4.20	34.93	1,000	3.75	34.88	27.73
1,187	3.51	34.87				

Station 4097; May 7; latitude 43°43.5′ N., longitude 47°11′W., depth 4,372 meter, dynamic height 970.981

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.30	33.63	0	4.30	33.63	26.69
28	4.26	33.63	25	4.25	33.63	26.69
55	3.90	33.83	50	3.95	33.79	26.84
83	2.53	33.98	75	2.65	33.93	27.68
110	2.83	34.19	100	2.65	34.11	27.23
166	4.21	34.52	150	4.00	34.46	27.38
221	3.86	34.59	200	3.95	34.56	27.16
330	------	34.82	300	4.20	34.76	27.69
359	4.39	34.85	460	4.40	34.86	27.65
544	4.29	34.90	600	4.30	34.92	27.71
733	4.38	34.97	800	4.20	34.95	27.75
925	3.93	34.90	1,000	3.90	34.01	27.75
1,426	3.70	34.93				

Station 4098; May 8; latitude 43°50′ N., longitude 47°43′ W., depth 3,987 meters, dynamic height 970.979

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.88	33.39	0	3.88	33.39	26.54
24	3.84	33.40	25	3.80	33.40	26.56
49	2.23	33.52	50	2.20	33.53	26.80
73	2.23	33.91	75	2.25	33.92	27.11
99	2.46	34.10	100	2.45	34.10	27.23
147	3.45	34.41	150	3.45	34.42	27.40
196	3.54	34.55	200	3.55	34.56	27.50
295	5.03	34.89	300	5.05	34.89	27.60
405	4.39	43.91	400	4.40	34.91	27.69
590	4.23	34.91	600	4.25	34.92	27.72
761	4.14	34.89	800	4.10	34.90	27.72
956	3.93	34.92	1,000	3.90	34.92	27.76
1,456	3.67	34.93				

Station 4099; May 8; latitude 43°56′ N., longitude 48°06′ W., depth 3,731 meters, dynamic height 971.001

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.45	33.28	0	3.45	33.28	26.49
26	3.41	33.29	25	3.40	33.29	26.50
52	3.09	33.74	50	3.15	33.71	26.87
78	1.77	33.89	75	1.80	33.87	27.10
104	2.27	34.05	100	2.15	34.03	27.20
157	2.58	34.24	150	2.50	34.21	27.32
209	4.32	34.58	200	4.10	34.53	27.42
313	4.68	34.83	300	4.80	34.81	27.57
399	4.89	34.93	400	4.90	34.93	27.65
601	4.42	34.94	600	4.40	34.94	27.71
807	4.15	34.93	800	4.15	34.93	27.73
1,012	3.93	34.93	1,000	3.95	34.93	27.75
1,530	3.59	34.92				

Station 4100; May 8; latitude 44°07′ N., longitude 48°48′ W., depth 1,698 meters, dynamic height 970.979

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.91	33.26	0	1.91	33.26	26.61
25	3.05	33.44	25	3.03	33.44	26.66
51	3.74	34.02	50	3.75	34.00	27.04
76	3.74	34.16	75	3.75	34.16	27.17
101	3.68	34.22	100	3.70	34.21	27.21
151	3.57	34.40	150	3.60	34.40	27.37
202	4.18	34.52	200	4.15	34.51	27.40
303	5.10	34.90	300	5.10	34.89	27.59
284	5.11	34.87	400	4.90	34.95	27.67
440	4.79	34.95	600	4.25	34.92	27.72
604	4.21	34.92	800	4.05	34.92	27.74
776	4.10	34.92	1,000	3.70	34.90	27.76
1,248	3.47	34.86				

Station 4101; May 8; latitude 44°09′ N., longitude 48°55′ W., depth 642 meters, dynamic height 971.033

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.18	33.06	0	0.18	33.06	26.55
24	−0.27	33.08	25	−0.30	33.08	26.59
48	−1.15	33.21	50	−1.20	33.22	26.74
72	−1.50	33.32	75	−1.50	33.33	26.84
96	−1.34	33.41	100	−1.25	33.43	26.91
143	0.46	33.72	150	0.75	33.78	27.10
191	2.33	34.14	200	2.70	34.22	27.31
287	5.19	34.88	300	5.10	34.87	27.58
348	4.55	34.84	400	4.05	34.81	27.65
542	3.19	34.77	(600)	3.20	34.78	27.71

Station 4102; May 8; latitude 44°10.5′ N., longitude 49°04′ W., depth 183 meters, dynamic height 971.066

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.36	33.04	0	0.36	33.04	26.53
26	0.13	33.05	25	0.15	33.05	26.54
51	−0.72	33.12	50	−0.70	33.12	26.64
78	−1.42	33.36	75	−1.40	33.35	26.84
103	−1.29	33.43	100	−1.35	33.42	26.91
155	−0.62	33.58	150	−0.70	33.56	27.00

Station 4103; May 8; latitude 44°10.5′ N., longitude 49° 08′ W., depth 125 meters, dynamic height 971.066

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.23	33.05	0	0.23	33.05	26.54
27	−0.01	33.05	25	0.05	33.05	26.56
52	−1.26	33.26	50	−1.25	33.25	26.76
79	−1.24	33.32	75	−1.25	33.31	26.81

Station 4104; May 8; latitude 44°11′ N., longitude 49° 17′ W., depth 128 meters, dynamic height 971.078

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.86	33.09	0	0.86	33.09	26.54
25	0.55	33.10	25	0.55	33.10	26.56
95	0.43	33.10	(50)	0.45	33.10	26.57
			(75)	0.45	33.10	26.57
			100	0.45	33.10	26.57

Station 4105; May 8, latitude 44°59′ N., longitude 49°24′ W., depth 67 meters, dynamic height 971.072

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.51	33.00	0	1.51	33.00	26.43
26	0.90	33.07	25	0.95	33.06	26.51
52	−0.09	33.17	50	−0.05	33.16	26.64

Station 4106; May 9; latitude 44°53.5′ N., longitude 48°57′ W., depth 102 meters, dynamic height 971.069

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.26	33.02	0	0.26	33.02	26.52
25	−0.01	33.02	25	−0.01	33.02	26.53
51	−1.26	33.20	50	−1.25	33.19	26.71
76	−1.52	33.30	75	−1.55	33.30	26.81

Station 4107; May 9; latitude 44°00.5′ N., longitude 48°51′ W., depth 786 meters, dynamic height 971.048

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.15	33.00	0	0.15	33.00	26.51
23	0.14	33.01	25	0.10	33.01	26.53
47	−0.91	33.11	50	−1.05	33.13	26.66
70	−1.55	33.30	75	−1.55	33.31	26.82
93	−1.49	33.36	100	−0.85	33.39	26.86
140	4.50	34.16	150	4.45	34.20	27.12
187	3.97	34.27	200	3.65	34.28	27.27
280	1.79	34.30	300	2.20	34.39	27.49
356	3.56	34.63	400	3.40	34.66	27.60
499	2.99	34.70	(600)	3.00	34.74	27.70

Station 4108; May 9; latitude 44°47′ N., longitude 48°37′ W., depth 1,646 meters, dynamic height 971.000

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.24	33.19	0	3.24	33.19	26.44
27	3.06	33.19	25	3.10	33.19	26.46
52	0.60	33.48	50	0.60	33.45	26.84
79	2.18	33.91	75	1.75	33.83	27.07
105	5.88	34.59	100	5.45	34.54	27.28
158	4.52	34.45	150	4.60	34.47	27.32
210	5.02	34.65	200	5.00	34.61	27.39
315	5.19	34.84	300	5.20	34.83	27.53
417	3.97	34.80	400	4.10	34.80	27.64
625	4.10	34.91	600	4.10	34.91	27.73
833	3.78	34.90	800	3.90	34.90	27.74
1,043	3.49	34.87	1,000	3.55	34.87	27.75
1,568	3.47	34.88				

Station 4109; May 9; latitude 44°43.5′ N., longitude 48°25′ W., depth 2,422 meters, dynamic height 971.024

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.92	33.16	0	3.92	33.16	26.35
25	4.90	33.40	25	4.90	33.40	26.44
51	4.67	34.04	50	4.65	34.02	26.96
75	5.06	34.24	75	5.06	34.24	27.09
101	7.73	34.78	100	7.70	34.78	27.16
151	4.20	34.32	150	4.20	34.32	27.25
202	4.33	34.44	200	4.30	34.43	27.32
303	3.44	34.56	300	3.45	34.55	27.50
406	4.56	34.84	400	4.55	34.83	27.61
607	4.21	34.90	600	4.20	34.90	27.71
806	4.07	34.92	800	4.10	34.92	27.74
1,008	3.84	34.90	1,000	3.85	34.90	27.74
1,513	3.47	34.88				

Station 4110; May 9; latitude 44°37′ N., longitude 47°53′ W., depth 3,191 meters, dynamic height 971.122

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	9.60	34.58	0	9.60	34.58	26.71
25	9.70	34.60	25	9.70	34.60	26.71
50	10.78	34.92	50	10.78	34.92	26.78
75	11.31	35.08	75	11.31	35.08	26.80
100	11.26	35.15	100	11.26	35.15	26.87
150	8.17	34.76	150	8.17	34.76	27.08
199	7.15	34.66	200	7.15	34.66	27.15
299	6.76	34.76	300	6.80	34.76	27.38
396	6.59	34.94	400	6.55	34.94	27.45
592	4.86	34.92	600	4.85	34.92	27.65
785	4.35	34.94	800	4.30	34.94	27.72
981	4.01	34.92	1,000	4.00	34.92	27.75
1,473	3.67	34.91				

Station 4111; May 9; latitude 44°30.5′ N., longitude 47°16′ W., depth 3,713 meters, dynamic height 971.123

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	10.98	35.08	0	10.98	35.08	26.86
25	10.96	35.06	25	10.96	35.06	26.85
49	10.93	35.05	50	10.90	35.05	26.85
74	11.08	35.08	75	11.05	35.08	26.85
98	10.89	35.05	100	10.90	35.05	26.85
147	10.80	35.12	150	10.75	35.12	26.94
197	9.48	35.01	200	9.45	35.01	27.07
295	8.54	35.06	300	8.50	35.06	27.26
365	7.63	35.06	400	7.15	35.06	27.47
552	5.46	35.00	600	5.15	34.99	27.67
742	4.61	34.98	800	4.40	34.97	27.74
931	4.03	34.94	1,000	3.95	34.93	27.75
1,406	3.54	34.90				

Station 4112; May 9; latitude 44°26′ N., longitude 46°41′ W., depth 3,804 meters, dynamic height 971.015

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.62	33.30	0	1.62	33.30	26.66
24	1.94	33.45	25	1.95	33.45	26.76
48	2.26	33.55	50	2.25	33.56	26.83
71	2.64	33.74	75	2.60	33.73	26.92
95	−0.61	33.59	100	−0.50	33.60	27.02
143	1.77	33.99	150	1.80	34.02	27.23
191	2.12	34.20	200	2.25	34.24	27.36
286	4.25	34.68	300	4.50	34.74	27.54
348	5.26	34.92	400	5.05	34.92	27.63
527	4.47	34.92	600	4.45	34.94	27.71
708	4.48	34.97	800	4.25	34.95	27.74
866	4.07	34.94	1,000	3.85	34.92	27.76
1,230	3.62	34.905				

Station 4113; May 9; latitude 44°26′ N., longitude 45°58′ W., depth 3,731 meters, dynamic height 971.141

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.17	33.56	0	4.17	33.56	26.65
25	9.81	34.81	25	9.81	34.81	26.86
48	9.60	34.78	50	9.55	34.77	26.87
73	9.26	34.73	75	9.25	34.72	26.88
97	9.21	34.70	100	9.20	34.71	26.88
146	11.10	35.11	150	11.00	35.11	26.88
194	9.90	35.08	200	9.85	35.08	27.06
291	9.03	35.13	300	8.90	35.12	27.25
414	6.63	34.90	400	6.80	34.91	27.40
623	5.33	35.02	600	5.45	35.02	27.66
835	4.30	34.97	800	4.40	34.98	27.74
1,045	3.89	34.90	1,000	3.95	34.91	27.74
1,571	3.50	34.885				

Station 4114; May 10; latitude 44°26′ N., longitude 45°08′ W., depth 4,227 meters, dynamic height 971.288

Observed Values: Depth, meters	Temperature °C.	Salinity ‰	Scaled Values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	13.59	35.68	0	13.59	35.68	26.82
25	13.59	35.69	25	13.59	35.69	26.83
50	13.55	35.69	50	13.55	35.69	26.83
75	13.56	35.69	75	13.56	35.69	26.83
100	13.56	35.68	100	13.56	35.68	26.82
150	13.53	35.67	150	13.53	35.67	26.83
200	13.28	35.66	200	13.28	35.66	26.87
300	11.82	35.44	300	11.82	35.44	26.99
343	11.06	35.32	400	10.00	35.19	27.12
521	7.81	35.03	600	6.75	34.99	27.46
704	5.59	34.96	800	4.55	34.90	27.67
894	3.79	34.84	1,000	3.80	34.85	27.71
1,393	3.80	34.92				

Station 4115; May 10; latitude 44°49′ N., longitude 45°04′ W., depth 4,298 meters, dynamic height 971.197

Observed Values: Depth, meters	Temperature °C.	Salinity ‰	Scaled Values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	13.59	35.74	0	13.59	35.74	26.87
26	13.58	35.74	25	13.55	35.74	26.87
51	13.56	35.74	50	13.55	35.74	26.87
76	13.59	35.75	75	13.60	35.75	26.87
101	13.59	35.77	100	13.55	35.77	26.90
153	13.53	35.77	150	13.55	35.77	26.90
204	12.96	35.68	200	13.00	35.69	26.94
305	11.43	35.52	300	11.50	35.50	27.09
344	10.52	35.36	400	9.20	35.27	27.32
513	6.80	35.02	600	5.90	35.00	27.59
682	5.29	34.99	800	4.60	34.96	27.71
851	4.33	34.94	1,000	3.95	34.91	27.74
1,318	3.51	34.86				

Station 4116; May 10; latitude 45°27′ N., longitude 45°14′ W., depth 4,024 meters, dynamic height 970.995

Observed Values: Depth, meters	Temperature °C.	Salinity ‰	Scaled Values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.17	33.20	0	1.17	33.20	26.62
27	2.69	33.69	25	2.60	33.58	26.81
53	2.91	33.70	50	2.85	33.68	26.86
81	4.20	34.09	75	3.90	34.00	27.02
107	5.24	34.34	100	5.00	34.30	27.14
161	5.26	34.45	150	5.25	34.43	27.21
215	5.29	34.64	200	5.30	34.59	27.33
322	3.61	34.67	300	3.90	34.66	27.55
411	4.85	34.94	400	4.80	34.93	27.66
617	3.78	34.90	600	3.85	34.90	27.74
825	3.57	34.87	800	3.55	34.87	27.75
1,032	3.51	34.88	1,000	3.55	34.88	27.75
1,549	3.51	34.91				

Station 4117; May 10; latitude 45°28.5′ N., longitude 46°00′ W., depth 3,493 meters, dynamic height 970.914

Observed Values: Depth, meters	Temperature °C.	Salinity ‰	Scaled Values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	2.01	33.25	0	2.01	33.25	26.60
26	0.44	33.40	25	0.50	33.40	26.81
52	−0.28	33.66	50	−0.30	33.64	27.04
78	0.97	34.07	75	0.75	34.03	27.30
104	3.83	34.51	100	3.65	34.50	27.44
155	2.34	34.47	150	2.35	34.47	27.54
207	3.03	34.60	200	2.90	34.57	27.58
311	4.94	34.98	300	4.90	34.96	27.68
415	4.50	34.96	400	4.60	34.96	27.71
622	3.80	34.90	600	3.85	34.91	27.75
828	3.45	34.87	800	3.45	34.87	27.76
1,033	3.65	34.90	1,000	3.65	34.90	27.76
1,544	3.44	34.92				

Station 4118; May 10; latitude 45°29′ N., longitude 46°40′ W., depth 3,169 meters, dynamic height 970.928

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.00	33.22	0	1.00	33.22	26.64
22	0.90	33.34	25	0.90	33.35	26.74
43	1.26	33.48	50	1.15	33.60	26.93
64	0.82	33.96	75	1.90	34.24	27.39
86	3.54	34.43	100	3.00	34.41	27.44
129	1.73	34.35	150	1.85	34.38	27.50
172	2.22	34.44	200	2.70	34.54	27.56
258	3.78	34.76	300	4.05	34.85	27.68
376	4.26	34.90	400	4.25	34.90	27.70
566	3.98	34.90	600	3.90	34.90	27.74
757	3.61	34.89	800	3.65	34.88	27.74
948	3.65	34.87	1,000	3.65	34.88	27.74
1,433	3.53	34.91				

Station 4119; May 11; latitude 45°22′ N., longitude 47°16′ W., depth 2,862 meters, dynamic height 970.943

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.54	33.16	0	0.54	33.16	26.61
25	−0.03	33.16	25	−0.03	33.16	26.64
49	−0.60	33.23	50	−0.60	33.23	26.72
74	−0.36	33.71	75	−0.30	33.53	26.95
99	2.42	34.14	100	2.90	34.15	27.24
148	1.77	34.36	150	1.80	34.37	27.51
197	2.70	34.60	200	2.70	34.60	27.61
296	2.71	34.66	300	2.70	34.67	27.67
382	2.97	34.74	400	3.05	34.75	27.70
571	3.39	34.82	600	3.40	34.83	27.73
760	3.47	34.86	800	3.45	34.86	27.75
925	3.46	34.86	1,000	3.50	34.87	27.76
1,292	3.57	34.91				

Station 4120; May 11; latitude 45°39′ N., longitude 47°44′ W., depth 1,545 meters, dynamic height 970.918

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.87	33.16	0	0.87	33.16	26.59
25	0.88	33.26	25	0.88	33.26	26.67
50	0.51	33.47	50	0.51	33.47	26.87
75	0.79	33.98	75	0.79	33.98	27.25
100	1.61	34.31	100	1.61	34.31	27.47
150	2.13	34.50	150	2.13	34.50	27.58
201	3.77	34.76	200	3.75	34.76	27.64
301	3.67	34.79	300	3.65	34.79	27.67
399	3.99	34.87	400	4.00	34.87	27.71
599	4.04	34.93	600	4.05	34.93	27.74
798	3.82	34.92	800	3.80	34.92	27.77
997	3.64	34.905	1,000	3.65	34.91	27.77
1,490	3.50	34.92				

Station 4121; May 11; latitude 45°49′ N., longitude 48°03′ W., depth 672 meters, dynamic height 970.977

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.62	33.10	0	0.62	33.10	26.56
23	0.15	33.22	25	0.15	33.24	26.70
46	0.22	33.36	50	0.15	33.37	26.80
69	−0.94	33.42	75	−1.15	33.46	26.94
91	−1.40	33.56	100	−1.25	33.63	27.07
137	1.09	33.93	150	1.15	34.01	27.26
183	1.32	34.18	200	1.45	34.25	27.43
274	1.99	34.48	300	2.20	34.53	27.60
384	2.71	34.65	400	2.75	34.67	27.67
580	3.20	34.79	600	3.20	34.80	27.73

Tables of Oceanographic Data—Continued

STATIONS OCCUPIED IN 1950—Continued

Station 4122; May 11; latitude 45°53.5′ N., longitude 48°14′ W., depth 167 meters, dynamic height 971.047

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.18	33.04	0	0.18	33.04	26.54
27	−0.28	33.05	25	−0.25	33.05	26.56
53	−1.78	33.34	50	−1.75	33.31	26.82
79	−1.66	33.40	75	−1.70	33.39	26.89
105	−1.37	33.52	100	−1.45	33.51	26.99
159	−1.10	33.57	150	−1.15	33.56	27.02

Station 4123; May 11; latitude 45°56.5′ N., longitude 48°19′ W., depth 119 meters, dynamic height 971.054

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.52	33.02	0	0.52	33.02	26.50
27	−0.01	33.04	25	1.05	33.04	26.55
52	−1.24	33.23	50	−1.15	33.21	26.73
79	−1.62	33.40	75	−1.60	33.39	26.89
105	−1.48	33.41	100	−1.50	33.41	26.91

Station 4124; May 11; latitude 46°05.5′ N., longitude 48°36′ W., depth 91 meters, dynamic height 971.061

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.64	33.00	0	0.64	33.00	26.48
17	0.50	33.00	25	0.45	33.00	26.50
42	0.32	33.00	50	−0.05	33.00	26.52
69	−1.46	33.21	75	−1.50	33.24	26.76

Station 4125; May 11; latitude 46°11′ N., longitude 48°48′ W., depth 84 meters, dynamic height 971.045

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.83	33.03	0	0.83	33.03	26.50
24	0.81	33.03	25	0.85	33.03	26.50
49	0.42	33.04	50	0.40	33.04	26.53
71	−1.28	33.16	75	−1.35	33.17	26.70

Station 4126; May 11; latitude 46°17′ N., longitude 49°00′ W., depth 71 meters, dynamic height 971.036

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.14	32.98	0	1.14	32.98	26.44
24	1.11	32.98	25	1.10	32.98	26.44
53	−0.33	33.09	50	−0.25	33.07	26.58

Station 4127; May 11; latitude 46°16′ N., longitude 48°40′ W., depth 91 meters, dynamic height 971.045

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.82	33.03	0	0.82	33.03	26.50
25	0.76	33.025	25	0.76	33.025	26.50
52	0.32	33.01	50	0.35	33.01	26.51
77	−1.48	33.20	75	−1.30	33.19	26.71

Station 4128; May 11; latitude 46°13′ N., longitude 48°09′ W., depth 118 meters, dynamic height 971.043

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.39	33.00	0	0.39	33.00	26.50
23	0.36	33.00	25	0.35	33.00	26.50
46	−0.16	33.01	50	−0.40	33.02	26.55
69	−1.58	33.11	75	−1.60	33.15	26.69
92	−1.48	33.30	100	−1.40	33.37	26.86

Station 4129; May 11, latitude 46°10.5′ N., longitude 47°50′ W., depth 176 meters, dynamic height 971.026

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.09	33.02	0	0.09	33.02	26.53
25	−0.71	33.09	25	−0.71	33.09	26.61
52	−1.76	33.32	50	−1.75	33.31	26.82
77	−1.74	33.38	75	−1.75	33.38	26.88
103	−1.62	33.41	100	−1.65	33.40	26.90
154	−1.09	33.54	150	−1.10	33.52	26.98

Station 4130; May 12; latitude 46°08.5′ N., longitude 47°32′ W., depth 722 meters, dynamic height 970.968

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.35	33.08	0	0.35	33.08	26.56
25	−1.55	33.32	25	−1.55	33.32	26.83
50	−1.33	33.45	50	−1.33	33.45	26.93
75	−1.46	33.52	75	−1.46	33.52	27.00
101	−0.92	33.64	100	−0.95	33.63	27.06
150	0.44	34.02	150	0.44	34.02	27.31
201	1.50	34.31	200	1.45	34.29	27.46
302	2.27	34.52	300	2.25	34.52	27.59
403	2.93	34.70	400	2.90	34.69	27.67
612	3.34	34.81	600	3.30	34.81	27.73

Station 4131; May 12; latitude 46°06.5′ N., longitude 47°19′ W., depth 1,620 meters, dynamic height 970.935

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.97	33.37	0	0.97	33.37	26.76
27	0.63	33.38	25	0.70	33.38	26.78
53	−0.57	33.52	50	−0.45	33.50	26.94
80	−0.81	33.67	75	−0.80	33.64	27.06
106	1.00	34.01	100	0.40	33.95	27.26
160	2.41	34.48	150	2.30	34.41	27.50
212	2.55	34.59	200	2.55	34.57	27.61
318	2.70	34.68	300	2.70	34.67	27.67
410	2.98	34.74	400	2.95	34.73	27.69
613	3.28	34.80	600	3.25	34.80	27.72
817	3.51	34.84	800	3.50	34.84	27.73
1,026	3.44	34.87	1,000	3.45	34.87	27.76
1,556	3.52	34.89				

Station 4132; May 12; latitude 46°03.5′ N., longitude 46°43′ W., depth 604 meters, dynamic height 970.921

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.82	33.25	0	0.82	33.25	26.68
25	0.31	33.31	25	0.31	33.31	26.75
50	−1.47	33.56	50	−1.47	33.56	27.03
75	2.38	34.12	75	2.38	34.12	27.26
99	1.22	34.15	100	1.25	34.15	27.37
149	2.29	34.43	150	2.30	34.43	27.51
199	4.26	34.75	200	4.25	34.75	27.58
298	4.46	34.90	300	4.45	34.90	27.68
390	4.18	34.91	400	4.15	34.91	27.72
594	3.60	34.88	600	3.60	34.88	27.75

STATIONS OCCUPIED IN 1950—Continued

Station 4133; May 12; latitude 46°00′ N., longitude 46°09′ W., depth 1,440 meters, dynamic height 970.900

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.16	33.44	0	2.16	33.44	26.73
25	3.01	34.04	25	3.01	34.04	27.14
50	3.62	34.32	50	3.62	34.32	27.31
74	3.81	34.41	75	3.85	34.41	27.36
99	4.28	34.56	100	4.30	34.56	27.43
149	3.63	34.63	150	3.65	34.63	27.54
198	4.07	34.74	200	4.10	34.74	27.59
297	4.23	34.88	300	4.25	34.88	27.68
373	4.18	34.90	400	4.10	34.90	27.72
565	3.75	34.87	600	3.70	34.87	27.74
760	3.57	34.87	800	3.55	34.87	27.75
956	3.54	34.88	1,000	3.55	34.88	27.75
1,405	3.45	34.89				

Station 4134; May 12; latitude 46°01′ N., longitude 45°24′ W., depth 3,210 meters, dynamic height 970.968

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.04	33.25	0	2.04	33.25	26.60
25	0.53	33.35	25	0.53	33.35	26.76
49	−0.68	33.50	50	−0.65	33.51	26.96
74	4.10	34.16	75	4.10	34.16	27.13
99	3.86	34.29	100	3.85	34.20	27.19
148	4.87	34.55	150	4.85	34.55	27.30
197	4.41	34.62	200	4.40	34.62	27.40
296	4.00	34.72	300	4.00	34.72	27.59
392	3.62	34.77	400	3.60	34.77	27.67
590	3.86	34.88	600	3.85	34.88	27.72
789	3.95	34.92	800	3.95	34.92	27.75
987	3.76	34.91	1,000	3.75	34.91	27.76
1,483	3.49	34.91				

Station 4135; May 12; latitude 45°40.5′ N., longitude 44°58′ W., depth 3,932 meters, dynamic height 971.122

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	13.20	35.60	0	13.20	35.60	26.83
25	13.52	35.70	25	13.52	35.70	26.85
50	13.48	35.69	50	13.48	35.69	26.85
75	13.41	35.68	75	13.41	35.68	26.85
99	12.96	35.60	100	12.90	35.60	26.90
149	10.86	35.22	150	10.85	35.22	26.99
199	10.19	35.19	200	10.15	35.19	27.09
298	8.77	35.12	300	8.70	35.12	27.28
393	6.73	34.98	400	6.70	34.98	27.46
591	5.31	35.00	600	5.25	35.00	27.67
790	4.27	34.92	800	4.25	34.92	27.72
987	3.95	34.91	1,000	3.95	34.91	27.74
1,478	3.64	34.91				

Station 4136; May 13; latitude 45°20′ N., longitude 44°32′ W., depth 4,481 meters, dynamic height 971.185

Observed Values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	12.43	35.35	0	12.43	35.35	26.80
25	12.45	35.35	25	12.45	35.35	26.79
50	11.81	35.23	50	11.81	35.23	26.82
75	11.80	35.24	75	11.80	35.24	26.83
101	11.80	35.24	100	11.80	35.24	26.83
151	10.68	35.04	150	10.65	35.04	26.89
201	10.57	35.10	200	10.60	35.10	26.94
302	9.46	35.16	300	9.50	35.16	27.18
396	5.78	34.66	400	5.80	34.66	27.33
595	5.39	34.95	600	5.35	34.95	27.61
796	4.75	34.97	800	4.75	34.97	27.70
995	4.03	34.92	1,000	4.00	34.92	27.75
1,169	3.83	34.90				

Station 4137; May 13; latitude 45°33′ N., longitude 43°53′ W., depth 3,731 meters, dynamic height 971.302

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	14.12	35.74	0	14.12	35.74	26.75
25	14.08	35.74	25	14.08	35.74	26.76
49	14.06	35.74	50	14.05	35.74	26.76
74	14.08	35.74	75	14.10	35.745	26.76
99	14.06	35.745	100	14.05	35.74	26.76
148	13.73	35.68	150	13.75	35.68	26.78
197	13.81	35.67	200	13.80	35.67	26.77
296	11.91	35.47	300	11.80	35.47	27.01
378	10.24	35.28	400	9.85	35.23	27.17
571	6.94	34.98	600	6.60	34.98	27.47
767	5.39	34.98	800	5.25	34.98	27.65
962	4.81	35.00	1,000	4.75	35.00	27.72
1,456	4.00	34.95				

Station 4138; May 13; latitude 45°59.5 N., longitude 43°59′ W., depth 4,170 meters, dynamic height 971.121

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	13.51	35.67	0	13.51	35.67	26.83
26	13.36	35.66	25	13.35	35.66	26.85
52	13.32	35.65	50	13.30	35.65	26.85
79	12.68	35.53	75	12.70	35.54	26.89
105	12.93	35.64	100	12.90	35.62	26.91
157	12.97	35.75	150	12.95	35.74	26.99
209	11.37	35.44	200	11.70	35.50	27.05
314	7.70	34.94	300	8.15	35.00	27.27
381	5.46	34.73	400	5.25	34.73	27.45
569	4.34	34.85	600	4.30	34.86	27.66
756	4.10	34.90	800	4.05	34.90	27.72
943	3.86	34.90	1,000	3.80	34.90	27.75
1,406	3.47	34.88				

Station 4139; May 13; latitude 45°59′ N., longitude 44°39′ W., depth 3,676 meters, dynamic height 971.124

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	13.64	35.66	0	13.64	35.66	26.80
25	13.15	35.66	25	13.15	35.66	26.89
50	13.18	35.69	50	13.18	35.69	26.91
75	13.18	35.69	75	13.18	35.69	26.90
100	12.82	35.62	100	12.82	35.62	26.93
150	12.49	35.63	150	12.49	35.63	26.99
200	10.60	35.28	200	10.60	35.28	27.08
300	8.54	35.08	300	8.54	35.05	27.26
338	7.60	34.98	400	6.75	34.98	27.45
514	5.59	34.97	600	5.15	34.97	27.66
694	4.75	34.98	800	4.25	34.92	27.72
876	3.94	34.89	1,000	3.85	34.89	27.73
1,346	3.55	34.89				

Station 4140; May 13; latitude 46°20′ N., longitude 44°44′ W., depth 2,186 meters, dynamic height 970.954

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.11	33.32	0	2.11	33.32	26.64
23	2.01	33.52	25	2.00	33.58	26.86
47	4.69	34.16	50	4.65	34.15	27.06
70	2.35	34.02	75	2.05	34.02	27.21
93	1.47	34.04	100	1.60	34.10	27.30
140	4.10	34.48	150	3.95	34.47	27.39
187	2.70	34.40	200	2.70	34.42	27.47
280	2.95	34.60	300	3.10	34.64	27.61
314	3.20	34.66	400	3.45	34.74	27.65
479	3.59	34.79	600	3.70	34.85	27.72
649	3.76	34.86	800	3.55	34.86	27.74
824	3.50	34.86	1,000	3.35	34.87	27.77
1,299	3.19	34.89				

STATIONS OCCUPIED IN 1950—Continued

Station 4141; May 13; latitude 46°26′ N., longitude 44°42′ W., depth 655 meters, dynamic height 970.890

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.70	34.26	0	4.70	34.26	27.14
25	3.54	34.28	25	3.54	34.28	27.28
51	3.40	34.30	50	3.40	34.30	27.31
76	3.41	34.33	75	3.40	34.33	27.33
102	3.11	34.36	100	3.15	34.36	27.38
151	2.91	34.51	150	2.90	34.50	27.52
202	3.30	34.65	200	3.30	34.65	27.60
304	3.45	34.78	300	3.45	34.78	27.68
401	3.58	34.83	400	3.60	34.83	27.71
605	3.62	34.85	600	3.60	34.85	27.73

Station 4142; May 13; latitude 46°31′ N., longitude 44°41′ W., depth 227 meters, dynamic height 970.873

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.56	34.18	0	4.56	34.18	27.09
25	3.66	34.32	25	3.66	34.32	27.30
50	3.54	34.34	50	3.54	34.34	27.32
75	3.65	34.49	75	3.65	34.49	27.43
100	3.22	34.55	100	3.22	34.55	27.53
149	3.11	34.60	150	3.10	34.60	27.58
199	3.51	34.77	200	3.55	34.77	27.67

Station 4143; May 13; latitude 46°36′ N., longitude 44°44′ W., depth 170 meters, dynamic height 970.883

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.49	34.19	0	4.49	34.19	27.11
25	3.52	34.24	25	3.52	34.21	27.25
50	3.33	34.28	50	3.33	34.28	27.29
75	3.16	34.35	75	3.16	34.35	27.37
101	2.90	34.39	100	2.90	34.39	27.43
151	2.89	34.51	150	2.90	34.51	27.53

Station 4144; May 13; latitude 46°48′ N., longitude 44°51′ W., depth 162 meters, dynamic height 970.887

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.22	34.02	0	4.22	34.02	27.01
25	3.54	34.16	25	3.54	34.16	27.19
50	3.28	34.19	50	3.28	34.19	27.23
75	2.98	34.31	75	2.98	34.31	27.36
100	2.70	34.38	100	2.70	34.38	27.43
			(150)	2.65	34.51	27.55

Station 4145; May 27; latitude 47°23′ N., longitude 50°00′ W., depth 96 meters, dynamic height 971.027

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.88	32.85	0	1.88	32.85	26.28
25	0.80	32.94	25	0.80	32.94	26.43
51	−0.18	33.01	50	−0.15	33.01	26.54
76	−1.25	33.24	75	−1.20	33.23	26.74

Station 4146; May 27; latitude 47°45′ N., longitude 49°52′ W., depth 114 meters, dynamic height 971.030

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.61	32.82	0	1.16	32.82	26.28
25	1.35	32.82	25	1.35	32.82	26.29
50	0.16	32.92	50	0.16	32.92	26.44
75	−1.52	33.16	75	−1.52	33.16	26.69
100	−1.41	33.37	100	−1.41	33.37	26.86

Station 4147; May 27; latitude 47°52′N., longitude 49°49′ W., depth 169 meters, dynamic height 971.018

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.79	32.65	0	0.79	32.65	26.29
26	0.05	32.69	25	0.10	32.69	26.25
51	−1.75	33.19	50	−1.75	33.18	26.72
78	−1.74	33.30	75	−1.75	33.29	26.80
103	−1.67	33.38	100	−1.70	33.37	26.87
155	−0.66	33.69	150	−0.80	33.65	27.07

Station 4148; May 27; latitude 48°09.5′ N., longitude 49°45′W., depth 217 meters, dynamic height 970.989

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	0.94	32.49	0	0.94	32.49	26.05
26	0.23	32.92	25	0.25	32.89	26.41
51	0.17	33.38	50	0.15	33.36	26.79
77	−1.18	33.43	75	−1.15	33.43	26.91
102	−1.37	33.52	100	−1.35	33.51	26.98
153	0.29	33.94	150	0.15	33.92	27.25
204	1.76	34.37	200	1.65	34.34	27.49

Station 4149; May 28; latitude 48°34′ N., longitude 49°36′ W., depth 660 meters, dynamic height 970.888

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.17	33.68	0	2.17	33.68	26.92
27	2.46	33.82	25	2.45	33.81	27.00
53	0.56	34.01	50	0.60	33.98	27.26
80	2.29	34.29	75	2.15	34.23	27.36
106	2.10	34.45	100	2.15	34.43	27.52
160	2.39	34.54	150	2.35	34.52	27.58
212	2.64	34.64	200	2.60	34.62	27.64
318	2.98	34.74	300	2.95	34.73	27.69
419	3.11	-----	400	3.10	34.78	27.72
631	3.25	34.84	600	3.25	34.83	27.74

Station 4150; May 28; latitude 48°44′ N., longitude 49°30′ W., depth 1,152 meters, dynamic height 970.862

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.24	33.97	0	3.24	33.97	27.06
27	3.32	34.28	25	3.30	34.26	27.29
53	2.19	34.33	50	2.35	34.32	27.42
80	2.03	34.48	75	2.05	34.47	27.57
106	2.22	34.53	100	2.15	34.52	27.60
160	2.52	34.63	150	2.45	34.61	27.64
212	2.81	34.69	200	2.75	34.68	27.67
318	3.05	34.75	300	3.00	34.74	27.70
393	3.11	34.76	400	3.15	34.76	27.70
602	3.32	34.82	600	3.30	34.82	27.74
			(800)	3.35	34.85	27.75
			(1,000)	3.35	34.86	27.76

Station 4151; May 28; latitude 48°56.5′ N., longitude 49°27′ W., depth 1,486 meters, dynamic height 970.857

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	3.64	34.16	0	3.64	34.16	27.18
26	3.02	34.15	25	3.05	34.15	27.22
52	2.19	34.32	50	2.20	34.31	27.43
78	2.32	34.50	75	2.30	34.48	27.55
103	2.51	34.60	100	2.50	34.59	27.62
156	2.72	34.68	150	2.70	34.68	27.67
208	2.98	34.72	200	2.95	34.72	27.69
311	3.17	34.78	300	3.15	34.78	27.71
362	3.22	34.79	400	3.25	34.80	27.72
546	3.36	34.84	600	3.35	34.84	27.74
924	3.35	34.85	800	3.35	34.85	27.75
1,110	3.36	34.89	1,000	3.35	34.85	27.75

Station 4152; May 28; latitude 49°29′ N., longitude 49°18′ W., depth 1,508 meters, dynamic height 970.841

Observed Values: Depth, meters	Temperature °C.	Salinity ‰	Scaled Values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.41	34.62	0	5.41	34.62	27.35
24	4.90	34.60	25	4.90	34.60	27.39
47	4.30	34.63	50	4.25	34.63	27.48
71	3.84	34.66	75	3.75	34.67	27.57
95	3.38	34.69	100	3.30	34.70	27.64
141	3.13	34.75	150	3.15	34.76	27.70
188	3.30	34.79	200	3.30	34.79	27.71
283	3.25	-----	300	3.25	34.79	27.71
320	3.22	34.79	400	3.20	34.80	27.73
490	3.20	34.81	600	3.15	31.82	27.75
659	3.17	34.82	800	3.20	34.82	27.75
845	3.19	34.82	1,000	3.20	34.83	27.75
1,312	3.3[illegible]	31.86				

Station 4153; May 28; latitude 49°58.5′ N., longitude 49°02′ W., depth 1,792 meters, dynamic height 970.841

Observed Values: Depth, meters	Temperature °C.	Salinity ‰	Scaled Values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.19	34.50	0	5.19	34.50	27.28
25	4.08	34.45	25	4.08	34.45	27.36
48	1.69	31.39	50	1.70	34.39	27.52
73	2.57	34.57	75	2.60	34.58	27.60
97	2.55	34.61	100	2.55	34.64	27.66
146	2.80	34.69	150	2.80	34.69	27.67
194	2.95	34.74	200	2.95	34.74	27.70
291	3.04	34.78	300	3.05	34.78	27.72
365	3.11	34.81	400	3.15	34.81	27.74
556	3.19	34.81	600	3.20	34.81	27.74
753	3.19	34.82	800	3.20	34.82	27.75
972	3.18	34.84	1,000	3.20	34.84	27.76
1,466	3.37	34.90				

Station 4154, May 28; latitude 49°47.5′ N., longitude 49°31′ W., depth 1,239 meters, dynamic height 970.845

Observed Values: Depth, meters	Temperature °C.	Salinity ‰	Scaled Values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.19	34.41	0	4.19	34.44	27.34
26	4.27	34.52	25	4.25	34.52	27.40
51	2.84	34.48	50	2.85	34.48	27.50
77	2.66	34.54	75	2.70	34.54	27.56
102	2.51	34.59	100	2.55	34.59	27.62
154	2.75	34.67	150	2.75	34.67	27.67
205	2.95	34.70	200	2.90	34.70	27.68
307	3.11	34.76	300	3.10	34.76	27.71
349	3.16	34.80	400	3.25	34.82	27.74
528	3.26	34.83	600	3.25	34.83	27.74
713	3.25	34.84	800	3.25	34.84	27.75
886	3.30	34.845	1,000	3.30	34.845	27.76
1,313	------	34.84				

Station 4155; May 29; latitude 49°39′ N., longitude 50°02′ W, depth 597 meters, dynamic height 970.873

Observed Values: Depth, meters	Temperature °C.	Salinity ‰	Scaled Values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	2.70	33.47	0	2.70	33.47	26.72
23	0.91	33.75	25	0.90	33.77	27.09
46	1.08	34.02	50	1.20	34.08	27.31
69	2.20	34.41	75	2.30	34.44	27.52
92	2.45	34.51	100	2.50	34.53	27.57
138	2.74	34.62	150	2.80	34.63	27.62
184	2.91	34.67	200	2.95	34.69	27.66
276	3.06	34.75	300	3.05	34.76	27.71
325	3.08	34.76	400	3.10	34.77	27.72
519	3.11	34.79	(600)	3.15	34.80	27.73

Station 4156; May 29; latitude 49°28′ N., longitude 50°33′W. depth 337 meters, dynamic height 970.928

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.50	33.14	0	1.50	33.14	26.54
27	0.72	33.22	25	0.75	33.20	26.54
53	0.61	33.56	50	0.10	33.52	26.93
79	−0.04	33.90	75	−0.05	33.85	27.20
105	0.68	34.08	100	0.55	34.05	27.33
159	1.42	34.32	150	1.30	34.28	27.46
211	1.95	34.46	200	1.85	34.43	27.54
316	2.76	34.67	300	2.65	34.64	27.65

Station 4157; May 29; latitude 49°20.5′ N., longitude 51′04′ W. depth 336 meters, dynamic height 970.936

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.42	32.96	0	1.42	32.96	26.40
25	−0.02	33.30	25	−0.02	33.30	26.75
51	−1.37	33.42	50	−1.40	33.42	26.91
76	−0.15	33.66	75	−0.20	33.66	27.06
103	−0.09	33.88	100	−0.10	33.85	27.20
153	1.14	34.17	150	1.10	34.15	27.38
204	1.76	31.39	200	1.70	34.37	27.51
307	2.79	34.69	300	2.70	34.67	27.67

Station 4158; May 29., latitude 49°10′ N., longitude 51°28′ W., depth 323 meters, dynamic height 971.008

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.87	32.32	0	0.87	32.32	25.93
25	−0.89	32.63	25	−0.89	32.63	26.26
49	−1.76	33.25	50	−1.75	33.26	26.78
75	−1.73	33.34	75	−1.70	33.34	26.85
99	−1.72	33.38	100	−1.70	33.38	26.88
148	−1.50	33.50	150	−1.50	33.52	27.00
197	−0.23	33.86	200	−0.15	33.88	27.23
296	2.53	34.60	300	2.65	34.62	27.64

Station 4159; May 29; latitude 49°06′ N., longitude 51°47′W., depth 306 meters, dynamic height 971.006

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	0.94	32.46	0	0.94	32.46	26.03
21	−0.43	32.50	25	−0.45	32.51	26.14
49	−1.69	33.14	50	−1.70	33.15	26.70
73	−1.74	33.28	75	−1.75	33.29	26.80
98	−1.72	33.36	100	−1.70	33.37	26.87
156	−0.91	33.63	150	−1.10	33.60	27.05
195	0.36	33.92	200	0.50	33.96	27.26
281	2.27	34.52	(300)	2.55	34.62	27.65

Station 4160; May 29; latitude 48°59′ N., longitude 52°06′W., depth 296 meters, dynamic height 971.011

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.26	32.37	0	1.26	32.37	25.94
24	−0.20	32.46	25	−0.25	32.47	26.10
48	−1.12	33.22	50	−1.15	33.24	26.75
72	−1.72	33.38	75	−1.70	33.39	26.89
96	−1.34	33.46	100	−1.30	33.48	26.95
144	−1.18	33.67	150	−1.10	33.70	27.13
192	−0.05	33.93	200	0.15	33.97	27.29
272	1.38	34.26				

STATIONS OCCUPIED IN 1950—Continued

Station 4161; May 29; latitude 48°51′ N., longitude 52°26′W., depth 360 meters, dynamic height 971.050

Observed values: Depth, meters	Temperature °C	Salinity ‰	Scaled Values: Depth, meters	Temperature °C	Salinity ‰	σ_t
0	0.35	31.76	0	0.35	31.76	25.50
28	−1.57	32.81	25	−1.50	32.67	26.30
57	−1.71	33.18	50	−1.70	33.12	26.67
85	−1.73	33.26	75	−1.70	33.24	26.76
113	−1.75	33.32	100	−1.75	33.29	26.80
170	−1.64	33.41	150	−1.70	33.37	26.87
227	−1.16	33.67	200	−1.45	33.54	27.01
340	−1.78	34.34	300	0.65	34.10	27.36

Station 4162; May 29; latitude 48°48.5′ N., longitude 52°43′ W., depth 220 meters, dynamic height 971.072

Observed values: Depth, meters	Temperature °C	Salinity ‰	Scaled Values: Depth, meters	Temperature °C	Salinity ‰	σ_t
0	0.90	31.95	0	0.90	31.95	25.62
25	−0.69	32.59	25	−0.69	32.59	26.22
50	−1.75	33.12	50	−1.75	33.12	26.67
75	−1.76	33.19	75	−1.76	33.19	26.73
100	−1.75	33.22	100	−1.75	33.22	26.75
149	−1.71	33.28	150	−1.70	33.29	26.80
199	−1.60	33.40	200	−1.60	33.40	26.90

Station 4163; May 29; latitude 48°47′ N., longitude 52°50′ W., depth 142 meters, dynamic height 971.079

Observed values: Depth, meters	Temperature °C	Salinity ‰	Scaled Values: Depth, meters	Temperature °C	Salinity ‰	σ_t
0	2.30	32.23	0	2.30	32.23	25.75
18	1.41	32.25	25	0.30	32.39	26.01
42	−1.70	33.03	50	−1.70	33.09	26.64
65	−1.74	33.14	75	−1.75	33.15	26.70
88	−1.75	33.16	100	−1.75	33.17	26.71
121	−1.76	33.20				

Station 4164; May 29; latitude 48°44.5′ N., longitude 52°58′ W., depth 110 meters, dynamic height 971.081

Observed values: Depth, meters	Temperature °C	Salinity ‰	Scaled Values: Depth, meters	Temperature °C	Salinity ‰	σ_t
0	1.47	32.20	0	1.47	32.20	25.79
23	0.64	32.26	25	0.50	32.30	25.93
46	−1.65	32.93	50	−1.65	32.98	26.55
69	−1.74	33.11	75	−1.75	33.13	26.68
92	−1.76	33.19	100	−1.75	33.21	26.75

Station 4165; May 30; latitude 48°39′ N., longitude 52°45′ W., depth 249 meters, dynamic height 971.073

Observed values: Depth, meters	Temperature °C	Salinity ‰	Scaled Values: Depth, meters	Temperature °C	Salinity ‰	σ_t
0	1.25	32.18	0	1.25	32.18	25.78
25	0.97	32.68	25	0.97	32.68	26.21
50	−1.69	33.03	50	−1.69	33.03	26.59
71	−1.74	33.14	75	−1.75	33.14	26.69
99	−1.77	33.18	100	−1.75	33.18	26.72
119	−1.74	33.24	150	−1.70	33.24	26.77
198	−1.68	33.35	200	−1.65	33.36	26.86

Station 4166; May 30; latitude 48°30.5 N., longitude 52°33′ W., depth 238 meters, dynamic height 971.061

Observed Values: Depth, meters	Temperature °C	Salinity ‰	Scaled Values: Depth, meters	Temperature °C	Salinity ‰	σ_t
0	1.78	32.14	0	1.78	32.14	25.72
25	−0.81	32.55	25	−0.81	32.55	26.18
50	−1.72	33.07	50	−1.72	33.07	26.63
75	−1.74	33.19	75	−1.74	33.19	26.73
100	−1.74	33.21	100	−1.74	33.21	26.75
149	−1.72	33.31	150	−1.70	33.31	26.82
199	−1.40	33.45	200	−1.40	33.46	26.94

Station 4167; May 30; latitude 48°19.5′ N., longitude 52°11′ W., depth 183 meters, dynamic height 971.051

Observed Values: Depth, meters	Temperature °C	Salinity ‰	Scaled Values: Depth, meters	Temperature °C	Salinity ‰	σ_t
0	1.13	32.46	0	1.13	32.46	26.02
28	0.59	32.55	25	0.70	32.52	26.09
57	−1.67	33.13	50	−1.55	33.00	26.57
85	−1.73	33.22	75	−1.70	33.19	26.73
113	−1.73	33.28	100	−1.75	33.25	26.78
170	−1.37	33.46	150	−1.55	33.39	26.89

Station 4168; May 30; latitude 48°09.5′ N., longitude 51°56′ W., depth 186 meters, dynamic height 971.047

Observed Values: Depth, meters	Temperature °C	Salinity ‰	Scaled Values: Depth, meters	Temperature °C	Salinity ‰	σ_t
0	1.19	32.37	0	1.19	32.37	25.95
28	−0.49	32.54	25	−0.25	32.49	26.11
56	−1.76	33.15	50	−1.70	33.03	26.59
84	−1.76	33.24	75	−1.75	33.22	26.75
112	−1.72	33.30	100	−1.75	33.27	26.79
168	−1.41	33.47	150	−1.55	33.41	26.91

Station 4169; May 30; latitude 48°03′ N., longitude 51°37′ W., depth 266 meters, dynamic height 971.052

Observed Values: Depth, meters	Temperature °C	Salinity ‰	Scaled Values: Depth, meters	Temperature °C	Salinity ‰	σ_t
0	1.35	32.58	0	1.35	32.58	26.11
24	0.58	32.65	25	0.50	32.65	26.22
48	−1.67	33.02	50	−1.65	33.03	26.59
73	−1.66	33.13	75	−1.65	33.14	26.68
97	−1.60	33.23	100	−1.60	33.24	26.76
145	−1.40	33.32	150	−1.40	33.33	26.83
194	−1.37	33.38	200	−1.35	33.39	26.88
242	−1.31	33.42				

Station 4170; May 30; latitude 47°55.5′ N., longitude 51°16′ W., depth 176 meters, dynamic height 971.048

Observed Values: Depth, meters	Temperature °C	Salinity ‰	Scaled Values: Depth, meters	Temperature °C	Salinity ‰	σ_t
0	2.02	32.72	0	2.02	32.72	26.17
24	1.32	32.80	25	1.30	32.80	26.29
48	0.48	32.87	50	0.40	32.89	26.40
72	−1.33	33.08	75	−1.40	33.10	26.64
97	−1.60	33.24	100	−1.60	33.25	26.77
144	−1.33	33.40	150	−1.30	33.41	26.90

Station 4171; May 30; latitude 47°50′ N., longitude 51°04′ W., depth 124 meters, dynamic height 971.046

Observed Values: Depth, meters	Temperature °C	Salinity ‰	Scaled Values: Depth, meters	Temperature °C	Salinity ‰	σ_t
0	1.56	32.51	0	1.56	32.51	26.03
26	0.62	32.67	25	0.65	32.66	26.21
51	−0.84	32.98	50	−0.80	32.96	26.51
77	−1.56	33.13	75	−1.55	33.12	26.67
102	−1.56	33.30	100	−1.55	33.28	26.79

STATIONS OCCUPIED IN 1950—Continued

Station 4172; May 30; latitude 47°41.5′ N., longitude 50°42′ W., depth 136 meters, dynamic height 971.041

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.49	32.79	0	1.49	32.79	26.26
28	1.27	32.83	25	1.40	32.82	26.29
56	−0.52	33.01	50	−0.20	32.97	26.50
84	−1.17	33.16	75	−1.05	33.10	26.63
111	−1.42	33.36	100	−1.35	33.27	26.78

Station 4173; May 30; latitude 47°32′ N., longitude 50°23′ W., depth 151 meters, dynamic height 971.027

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	1.77	----	0	1.77	32.85	26.30
20	1.65	32.86	25	1.45	32.88	26.34
40	0.06	32.97	50	−0.70	33.01	26.56
60	−1.14	33.06	75	−1.55	33.18	26.71
80	−1.62	33.22	100	−1.40	33.36	26.85
120	−1.10	33.50	(150)	−0.70	33.71	27.12

Station 4174; May 30; latitude 47°25′ N., longitude 50°01′ W., depth 107 meters, dynamic height 971.027

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	2.11	32.82	0	2.11	32.82	26.24
23	2.00	32.83	25	1.80	32.84	26.28
45	0.20	32.97	50	−0.15	32.99	26.52
68	−1.10	33.06	75	−1.05	33.22	26.73
90	−0.79	33.58	(100)	−0.60	33.72	27.12

Station 4175; June 9; latitude 38°00′ N., longitude 50°12′ W., depth 5,304 meters, dynamic height 971.921

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	21.02	36.47	0	21.02	36.47	25.53
25	20.61	36.48	25	20.61	36.48	25.63
49	19.66	36.47	50	19.60	36.47	26.00
74	18.96	36.47	75	18.95	36.47	26.17
99	18.73	36.47	100	18.70	36.47	26.24
148	18.35	36.40	150	18.30	36.40	26.29
197	18.04	36.38	200	18.00	36.38	26.35
296	17.53	36.32	300	17.55	36.32	26.41
399	16.90	36.22	400	16.90	36.22	26.49
795	11.70	35.45	600	14.15	35.89	26.86
992	8.04	35.05	800	11.60	35.44	27.02
1,187	5.82	35.01	1,000	7.90	35.04	27.34
1,389	5.02	35.01	1,500	4.65	35.00	27.74
1,590	4.40	34.98	2,000	3.85	34.94	27.77
1,986	3.84	34.94				
2,481	3.47	34.93				

Station 4176; June 9; latitude 38°34′ N., longitude 50°02′W., depth 5,286 meters, dynamic height 971.810

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	23.44	36.33	0	23.44	36.33	24.84
25	23.02	36.35	25	23.02	36.35	24.97
50	21.98	36.46	50	21.98	36.46	25.36
74	19.65	36.46	75	19.60	36.46	26.00
99	19.29	36.42	100	19.25	36.42	26.06
149	19.03	36.44	150	19.00	36.44	26.14
199	18.73	36.45	200	18.70	36.45	26.23
298	17.90	36.37	300	18.00	36.37	26.34
397	17.06	36.28	400	17.00	36.32	26.54
405	16.91	36.36	600	13.15	36.08	27.21
526	14.74	36.45	800	7.45	35.02	27.39
640	12.30	-------	1,000	5.55	34.97	27.61
734	9.14	35.13	(1,500	4.30	34.98	27.75
934	5.79	34.96	(2,000	3.80	34.94	27.78
1,174	4.99	35.00				
1,478	4.31	34.98				

Station 4177; June 9; latitude 39°02.5′ N., longitude 49°53′ W., depth 5,267 meters, dynamic height 971.362

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	20.60	35.74	0	20.60	35.74	25.18
23	16.89	35.51	25	16.70	35.51	25.98
46	15.46	35.52	50	15.25	35.51	26.32
69	14.11	35.36	75	14.00	35.36	26.48
92	13.90	35.41	100	13.95	35.44	26.55
138	14.19	35.62	150	13.85	35.58	26.68
184	13.21	35.47	200	13.05	35.46	26.76
276	12.31	35.44	300	11.85	35.39	26.94
376	9.80	35.17	400	9.45	35.11	27.15
142	13.54	35.48	600	6.20	34.92	27.49
284	12.06	35.42	800	4.85	34.93	27.65
465	8.39	35.00	1,000	4.45	34.94	27.71
630	5.88	34.92	1,500	3.90	34.95	27.78
808	4.82	34.93	(2,000)	3.50	34.94	27.81
1,168	4.24	34.95				
1,669	3.70	34.95				

Station 4178; June 10; latitude 39°36′ N., longitude 49°58′ W., depth 5,212 meters, dynamic height 971.439

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	21.84	36.21	0	21.84	36.21	25.20
25	19.48	35.84	25	19.48	35.84	25.55
50	17.29	35.86	50	17.29	35.86	26.12
74	15.26	35.59	75	15.25	35.59	26.39
99	15.81	35.94	100	15.80	35.94	26.54
149	14.55	35.72	150	14.55	35.72	26.64
199	13.26	35.44	200	13.25	35.44	26.70
298	12.48	35.41	300	12.45	35.41	26.84
400	9.76	35.14	400	9.75	35.14	27.12
592	7.09	35.00	600	7.00	34.99	27.43
790	5.41	34.92	800	5.35	34.92	27.59
987	4.60	34.91	1,000	4.55	34.91	27.68
1,186	4.19	34.93	1,500	3.85	34.92	27.76
1,584	3.75	34.92	2,000	3.50	34.87	27.76
1,994	3.49	34.87				
2,510	3.26	34.88				

Station 4179; June 10; latitude 40°05′ N., longitude 50°15′ W., depth 5,304 meters, dynamic height 971.540

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	22.11	36.24	0	22.11	36.24	25.14
21	22.00	36.23	25	21.70	36.22	25.25
43	19.77	36.18	50	19.50	36.25	25.86
64	19.14	36.47	75	19.75	36.44	26.20
86	18.39	36.41	100	18.15	36.39	26.32
128	17.72	36.34	150	17.20	36.26	26.45
171	16.59	36.19	200	16.10	36.10	26.58
257	15.09	35.94	300	14.30	35.81	26.77
353	13.19	35.65	400	12.05	35.51	27.00
600	7.82	35.04	600	7.80	35.04	27.35
802	6.49	35.09	800	6.50	35.09	27.57
1,003	5.11	34.98	1,000	5.10	34.98	27.66
1,206	4.26	34.88	1,500	3.95	34.88	27.71
1,614	3.84	34.88	2,000	3.50	34.84	27.73
2,024	3.50	34.84				
2,539	3.23	34.82				

STATIONS OCCUPIED IN 1950—Continued

Station 4180; June 10; latitude 40°46′ N., longitude 50°34′ W., depth 3,566 meters, dynamic height 971.467

Observed values			Scaled Values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	22.32	36.34	0	22.32	36.34	25.16
14	22.19	36.34	25	19.40	36.06	25.74
28	19.20	35.99	50	18.60	36.36	26.18
41	18.96	36.36	75	17.05	36.29	26.51
55	18.08	36.35	100	16.80	36.25	26.53
82	16.87	36.27	150	16.75	36.24	26.54
165	16.71	36.22	200	15.25	35.81	26.56
206	15.02	35.73	300	13.00	35.42	26.74
566	8.10	35.10	400	11.10	35.27	26.99
757	5.65	34.98	600	7.55	35.07	27.42
949	4.65	34.96	800	5.30	34.98	27.64
1,140	4.22	34.94	1,000	4.50	34.96	27.72
1,523	3.68	34.90	1,500	3.70	34.90	27.76
1,918	3.57	34.92	2,000	3.50	34.92	27.80
2,418	3.17	34.90				

Station 4181; June 10; latitude 41°10′ N., longitude 50°25′ W., depth 4,115 meters, dynamic height 971.489

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	21.63	36.15	0	21.63	36.15	25.21
21	21.50	36.13	25	21.00	36.09	25.35
42	18.18	35.91	50	18.35	36.07	26.02
63	18.57	36.33	75	18.50	36.31	26.16
84	18.31	36.28	100	17.75	36.23	26.28
126	16.61	36.12	150	15.50	35.92	26.59
168	14.89	35.72	200	14.40	35.67	26.64
252	13.71	35.59	300	12.65	35.44	26.82
358	11.51	35.26	400	10.85	35.23	27.00
531	8.82	35.13	600	7.75	35.07	27.39
704	6.30	34.98	800	5.40	34.96	27.62
876	5.00	34.96	1,000	4.65	34.96	27.71
1,056	4.59	34.96	1,500	4.20	34.97	27.77
1,421	4.31	34.98	2,000	3.55	34.91	27.78
1,803	3.71	34.92				
2,297	3.35	34.90				

Station 4182; June 11; latitude 41°36′ N., longitude 50°09′ W., depth 3,749 meters, dynamic height 971.305

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	18.18	35.70	0	18.18	35.70	25.78
25	17.73	36.05	25	17.73	36.05	26.16
50	17.18	36.17	50	17.18	36.17	26.39
76	16.87	36.24	75	16.90	36.24	26.50
101	15.77	35.97	100	15.80	35.98	26.56
151	13.77	35.56	150	13.80	35.57	26.69
201	13.13	35.56	200	13.15	35.56	26.81
302	10.99	35.34	300	11.05	35.34	27.04
409	8.12	35.02	400	8.40	35.01	27.26
598	5.29	34.86	600	5.25	34.86	27.56
793		34.90	800	4.50	34.90	27.67
986	4.17	34.91	1,000	4.15	34.91	27.72
1,184	3.92	34.90	1,500	3.70	34.89	27.75
1,577	3.66	34.89	2,000	3.50	34.89	27.77
1,981	3.53	34.89				
2,494	3.20	34.90				

Station 4183; June 11; latitude 42°00′ N., longitude 49°58′ W., depth 3,512 meters, dynamic height 971.078

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	10.57	32.88	0	10.57	32.88	25.22
24	5.87	33.23	25	5.85	33.24	26.21
49	5.63	33.72	50	5.65	33.75	26.63
73	9.87	34.86	75	9.85	34.85	26.88
98	6.00	34.29	100	5.95	34.29	27.02
146	5.54	34.40	150	5.50	34.40	27.16
195	5.25	34.48	200	5.20	34.49	27.27
293	3.56	34.62	300	3.50	34.62	27.56
408	3.34	34.62	400	3.35	34.62	27.57
477	4.32	34.80	600	4.35	34.89	27.68
639	4.35	34.90	800	3.75	34.855	27.715
803	3.76	34.86	1,000	3.65	34.845	27.715
971	3.66	34.84	1,500	3.65	34.90	27.76
1,316	3.75	34.90	2,000	3.40	34.90	27.79
1,668	3.58	34.90				
2,122	3.32	34.90				

Station 4184; June 11; latitude 42°26′ N., longitude 50°08′ W., depth 2,866 meters, dynamic height 970.999

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	9.86	33.11	0	9.86	33.11	25.52
26	3.75	33.38	25	4.25	33.36	26.47
51	2.98	33.82	50	2.95	33.80	26.95
77	2.97	34.08	75	2.95	34.06	27.16
103	2.68	34.18	100	2.70	34.16	27.26
153	3.93	34.52	150	3.90	34.50	27.42
205	3.91	34.61	200	3.90	34.60	27.50
308	4.50	34.80	300	4.50	34.79	27.58
414	4.24	34.85	400	4.25	34.84	27.65
615	4.28	34.91	600	4.30	34.91	27.70
816	3.76	34.86	800	3.75	34.86	27.72
1,017	3.83	34.89	1,000	3.85	34.89	27.75
1,220	3.63	34.88	1,500	3.55	34.90	27.77
1,621	3.52	34.90	2,000	3.30	34.89	27.79
2,035	3.29	34.89				
2,557	2.99	34.89				

Station 4185; June 11; latitude 42°40.5′ N., longitude 50°10′ W., depth 1,335 meters, dynamic height 971.025

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.84	33.22	0	8.84	33.22	25.76
25	4.87	33.56	25	4.87	33.56	26.58
49	4.18	33.84	50	4.15	33.85	26.87
74	4.66	34.17	75	4.70	34.18	27.08
98	5.48	34.38	100	5.45	34.38	27.15
147	4.65	34.37	150	4.60	34.38	27.25
197	4.58	34.54	200	4.60	34.55	27.38
295	5.17	34.84	300	5.15	34.85	27.56
403	5.03	34.91	400	5.05	34.91	27.62
602	4.31	34.90	600	4.30	34.90	27.69
798	4.11	34.91	800	4.10	34.91	27.73
991	3.79	34.90	1,000	3.80	34.90	27.75
1,190	3.49	34.87				

Station 4186; June 11; latitude 42°49′ N., longitude 50°12′ W., depth 310 meters, dynamic height 971.063

Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.59	33.40	0	8.59	33.40	25.95
26	5.37	33.70	25	5.45	33.69	26.61
53	4.64	34.02	50	4.65	34.00	26.94
79	4.61	34.14	75	4.60	34.12	27.05
106	5.01	34.29	100	4.95	34.26	27.12
160	4.92	34.40	150	4.95	34.38	27.21
213	5.52	34.60	200	5.45	34.55	27.28
255	4.62	34.54	(300)	4.50	34.53	27.38

Station 4187; June 11; latitude 42°56′ N., longitude 50°13′ W., depth 85 meters, dynamic height 971.063

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	7.11	33.20	0	7.11	33.20	26.02
26	5.92	33.87	25	6.00	33.83	26.65
52	4.73	34.10	50	4.80	34.09	27.00
78	4.13	34.08	75	4.20	34.09	27.06

Station 4188; June 12; latitude 43°20′ N., longitude 50°15′ W., depth 59 meters, dynamic height 971.094

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.58	32.79	0	8.58	32.79	25.47
23	2.98	32.96	25	2.75	32.98	26.32
46	0.69	33.12	50	0.50	33.14	26.60

Station 4189; June 12; latitude 43°06′ N., longitude 50°39′ W., depth 93 meters, dynamic height 971.090

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.01	32.80	0	8.01	32.80	25.58
26	3.64	33.03	25	3.90	33.01	26.24
51	0.26	33.20	50	0.30	33.18	26.65
77	0.54	33.47	75	0.50	33.44	26.84

Station 4190; June 21; latitude 42°59.5′ N., longitude 50°50′ W., depth 177 meters, dynamic height 971.063

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.69	33.23	0	8.69	33.23	25.80
26	4.84	33.54	25	4.90	33.51	26.53
51	4.39	34.04	50	4.40	34.02	26.99
77	4.72	34.21	75	4.70	34.20	27.10
103	4.71	34.29	100	4.70	34.28	27.16
154	4.71	34.33	150	4.70	34.33	27.19

Station 4191; June 12; latitude 42°55.5′ N., longitude 50°56′W., depth 650 meters, dynamic height 971.049

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.76	33.10	0	8.76	33.10	25.69
25	3.49	33.42	25	3.49	33.42	26.60
50	5.63	34.32	50	5.63	34.32	27.08
75	5.42	34.32	75	5.42	34.32	27.11
100	5.28	34.34	100	5.28	34.34	27.14
150	5.47	34.48	150	5.47	34.48	27.23
200	5.24	34.56	200	5.24	34.56	27.32
300	4.25	34.60	300	4.25	34.60	27.46
392	4.23	34.72	400	4.20	34.73	27.57
588	3.86	34.80	600	3.85	34.80	27.66

Station 4192; June 12; latitude 42°50′ N., longitude 51°06′ W., depth 1,454 meters, dynamic height 971.020

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	9.67	33.06	0	9.67	33.06	25.52
24	5.16	33.40	25	5.00	33.41	26.44
49	2.23	33.69	50	2.25	33.70	26.93
73	3.14	33.92	75	3.20	33.94	27.04
97	3.53	34.11	100	3.60	34.14	27.16
146	5.20	34.46	150	5.20	34.47	27.26
195	4.13	34.50	200	4.15	34.51	27.40
292	4.38	34.74	300	4.40	34.75	27.50
362	4.52	34.82	400	4.50	34.85	27.63
548	4.30	34.90	600	4.10	34.89	27.71
738	3.52	34.83	800	3.50	34.84	27.73
930	3.51	34.84	1,000	3.50	34.84	27.73
1,361	3.52	34.845				

Station 4193; June 12; latitude 42°42′ N., longitude 51°22′W., depth 2,103 meters, dynamic height 970.999

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	10.34	33.30	0	10.34	33.30	25.59
23	6.39	33.31	25	6.25	33.32	26.22
46	4.31	33.56	50	3.90	33.60	26.71
69	2.67	33.83	75	2.40	33.87	27.06
92	2.13	33.96	100	2.15	34.00	27.18
138	2.89	34.29	150	3.10	34.36	27.39
184	3.50	34.53	200	3.65	34.59	27.51
276	4.05	34.76	300	4.15	34.79	27.62
332	4.26	34.82	400	4.35	34.87	27.67
508	4.39	34.92	600	4.25	34.91	27.71
689	4.02	34.89	800	3.70	34.87	27.74
872	3.59	34.86	1,000	3.50	34.87	27.76
1,350	3.51	34.87				

Station 4194; June 12; latitude 42°21′ N., longitude 51°39′ W., depth 3,100 meters, dynamic height 971.017

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	11.65	33.12	0	11.65	33.12	25.22
24	6.13	33.37	25	6.05	33.37	26.28
48	3.02	33.51	50	3.00	33.53	26.73
72	2.63	33.80	75	2.60	33.73	26.92
96	2.49	34.01	100	2.50	34.04	27.18
144	3.41	34.32	150	3.45	34.35	27.34
192	3.82	34.53	200	3.85	34.55	27.46
288	4.07	34.72	300	4.10	34.74	27.59
339	4.26	34.79	400	4.40	34.86	27.65
517	4.50	34.93	600	4.30	34.93	27.71
701	3.97	34.915	800	3.85	34.91	27.75
890	3.80	34.905	1,000	3.75	34.90	27.75
1,383	3.53	34.90				

Station 4195; June 12; latitude 41°57.5′ N., longitude 51°53′ W., depth 3,621 meters, dynamic height 971.196

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	14.38	34.16	0	14.38	34.16	25.48
24	13.16	34.70	25	13.15	34.76	26.20
48	15.60	35.78	50	15.55	35.78	26.46
72	12.42	35.14	75	12.30	35.14	26.66
95	12.13	35.20	100	12.15	35.23	26.76
144	12.86	35.50	150	12.80	35.50	26.84
191	11.98	35.48	200	11.70	35.45	27.02
286	8.65	34.98	300	8.55	35.03	27.23
281	9.73	35.20	400	5.20	34.72	27.45
438	4.53	34.66	600	4.45	34.83	27.62
606	4.44	34.84	800	4.20	34.91	27.72
771	4.23	34.91	1,000	4.05	34.92	27.74
1,208	3.92	34.93				

Station 4196; June 13; latitude 42°00′ N., longitude 50°42′ W., depth 3,383 meters, dynamic height 971.183

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	18.68	35.80	0	18.68	35.80	25.73
26	16.13	35.83	25	16.30	35.83	26.34
51	15.35	35.90	50	15.35	35.90	26.60
77	14.39	35.73	75	14.45	35.75	26.68
102	13.67	35.61	100	13.70	35.62	26.75
155	12.85	35.52	150	12.90	35.53	26.84
206	11.85	35.43	200	12.00	35.44	26.95
308	8.26	35.04	300	8.50	35.07	27.27
338	7.58	34.97	400	6.55	34.96	27.47
505	5.62	34.96	600	5.20	34.98	27.65
672	4.86	34.99	800	4.25	34.93	27.72
853	4.08	34.90	1,000	3.80	34.88	27.73
1,326	3.57	34.87				

Station 4197; June 13; latitude 42°05.5′ N., longitude 49°16′ W., depth, 3,109 meters, dynamic height 971.028

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	10.77	33.09	0	10.77	33.09	25.34
25	6.21	33.17	25	6.21	33.17	26.10
48	3.71	33.42	50	3.55	33.44	26.61
73	2.49	33.70	75	2.50	33.75	26.95
97	2.67	33.98	100	2.65	33.99	27.13
146	2.19	34.15	150	2.20	34.17	27.32
194	2.33	34.34	200	2.40	34.37	27.46
291	4.14	34.75	300	4.00	34.73	27.59
275	3.76	34.66	400	4.10	34.81	27.65
408	4.11	34.81	600	4.30	34.91	27.70
540	4.37	34.90	(800)	3.95	34.91	27.74
676	4.14	34.91	(1,000)	3.75	34.90	27.75

Station 4198; June 13; latitude 41°28.5′ N. longitude 49°00′ W., depth 2,724 meters, dynamic height 971.301

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	20.26	35.83	0	20.26	35.83	25.32
22	18.94	35.84	25	18.55	35.84	25.79
44	16.32	35.84	50	15.30	35.80	26.54
66	14.11	35.84	75	14.30	35.55	26.56
88	14.68	35.73	100	14.30	35.66	26.65
132	13.32	35.49	150	13.20	35.48	26.74
179	13.00	35.48	200	12.80	35.49	26.83
264	12.13	35.50	300	11.45	35.44	27.05
263	12.14	35.56	400	8.70	35.08	27.24
397	8.81	35.09	(600)	4.85	34.87	27.61
			(800)	4.50	34.90	27.67
			(1,000)	4.25	34.90	27.70

Station 4199; June 13-14; latitude 41°59′ N., longitude 47°57′ W., depth 3,713 meters, dynamic height 971.058

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	13.18	33.16	0	13.18	33.16	24.96
27	5.88	33.41	25	6.50	33.39	26.23
53	3.76	33.60	50	3.85	33.58	26.69
80	2.82	33.86	75	2.90	33.80	26.96
107	2.82	34.03	100	2.80	33.99	27.12
161	3.06	34.25	150	3.00	34.21	27.28
214	3.76	34.46	200	3.55	34.40	27.37
321	4.08	34.71	300	4.06	34.49	27.40
396	5.06	34.92	400	5.05	34.92	27.63
601	4.45	34.94	600	4.45	34.94	27.71
813	4.13	34.935	800	4.15	34.94	27.74
1,023	3.87	34.91	1,000	3.90	34.91	27.75
1,557	3.61	34.93				

Station 4200; June 14; latitude 42°22′ N., longitude 48°36′ W., depth 3,246 meters, dynamic height 971.003

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	11.17	33.25	0	11.17	33.25	25.40
24	5.63	33.37	25	5.55	33.37	26.34
48	4.00	33.56	50	3.75	33.57	26.70
72	2.43	33.84	75	2.45	33.88	27.05
96	2.97	34.09	100	3.00	34.11	27.20
144	3.65	34.42	150	3.75	34.45	27.39
192	4.43	34.64	200	4.50	34.66	27.48
288	4.81	34.87	300	4.80	34.87	27.62
356	4.67	34.88	400	4.65	34.90	27.66
545	4.54	34.95	600	4.45	34.95	27.72
741	4.11	34.94	800	3.95	34.92	27.75
934	3.69	34.88	1,000	3.65	34.89	27.75
1,431	3.62	34.92				

Station 4201; June 14; latitude 42°39′ N., longitude 49°02′ W., depth 2,482 meters, dynamic height 971.051

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	10.03	33.08	0	10.03	33.08	25.47
25	5.58	33.62	25	5.58	33.62	26.54
50	3.44	33.82	50	3.44	33.82	26.92
75	3.84	33.97	75	3.84	33.97	27.00
101	5.51	34.34	100	5.45	34.32	27.11
151	6.80	34.68	150	6.80	34.67	27.21
201	6.41	34.78	200	6.45	34.78	27.34
302	4.10	34.60	300	4.10	34.60	27.48
393	4.15	34.71	400	4.15	34.75	27.59
593	4.55	34.93	600	4.55	34.93	27.69
795	4.08	34.90	800	4.10	34.90	27.72
994	3.82	34.89	1,000	3.80	34.89	27.74
1,489	3.60	34.90				

Station 4202; June 14; latitude 43°19.5′ N., longitude 48°50′ W., depth 1,957 meters, dynamic height 971.002;

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	9.72	33.30	0	9.72	33.03	25.69
26	7.01	33.52	25	7.15	33.51	26.25
51	3.64	33.81	50	3.70	33.80	26.88
77	3.30	34.06	75	3.30	34.05	27.12
102	3.74	34.16	100	3.70	34.15	27.16
152	4.07	34.48	150	4.05	34.47	27.38
203	4.12	34.62	200	4.10	34.61	27.49
305	4.46	34.79	300	4.45	34.78	27.58
370	4.91	34.93	400	4.85	34.93	27.65
559	4.36	34.93	600	4.30	34.93	27.71
749	4.01	34.92	800	3.95	34.92	27.75
944	3.77	34.90	1,000	3.70	34.90	27.76
1,442	3.60	34.90				

Station 4203; June 14; latitude 43°03′ N., longitude 48°13′ W., depth 3,060 meters, dynamic height 971.013

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	10.39	33.33	0	10.39	33.33	25.61
26	7.04	33.49	25	7.25	33.48	26.21
51	4.56	33.78	50	4.65	33.77	26.76
76	3.00	33.96	75	3.00	33.95	27.07
101	3.22	34.15	100	3.20	34.14	27.20
152	3.88	34.44	150	3.85	34.43	27.37
203	4.13	34.58	200	4.10	34.57	27.46
304	4.71	34.83	300	4.70	34.82	27.59
384	4.67	34.90	400	4.65	34.90	27.66
579	4.32	34.92	600	4.30	34.92	27.71
779	4.04	34.91	800	4.05	34.91	27.73
981	3.87	34.90	1,000	3.85	34.90	27.74
1,501	3.52	34.91				

Station 4204; June 15; latitude 42°52′ N., longitude 47°32′ W., depth 3,493 meters, dynamic height 971.090

Observed values			Scaled values			
Depth, meters	Temperature ° C.	Salinity ‰	Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	13.24	33.21	0	13.24	33.21	24.98
27	5.74	33.20	25	6.40	33.20	26.11
52	3.20	33.33	50	3.30	33.29	26.51
79	8.20	34.60	75	7.90	34.59	26.98
104	6.58	34.43	100	6.80	34.44	27.02
157	5.81	34.44	150	5.95	34.44	27.14
210	5.02	34.43	200	5.10	34.43	27.23
311	5.02	34.72	300	5.05	34.69	27.44
419	4.68	34.84	400	4.75	34.82	27.58
627	4.33	34.92	600	4.35	34.92	27.71
834	4.11	34.91	800	4.20	34.91	27.72
1,044	3.84	34.90	1,000	3.85	34.90	27.74
1,571	3.61	34.91				

STATIONS OCCUPIED IN 1950—Continued

Station 4205; June 15; latitude 42°38′ N., longitude 46°54′ W., depth 4,061 meters, dynamic height 971.382

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	18.08	35.58	0	18.08	35.58	25.72
27	15.97	35.65	25	16.20	35.65	26.22
52	14.93	35.61	50	14.90	35.61	26.48
79	15.20	35.82	75	15.20	35.79	26.55
105	15.11	35.87	100	15.15	35.87	26.62
158	14.75	35.86	150	14.80	35.86	26.69
210	14.11	35.75	200	14.25	35.77	26.75
315	12.55	35.55	300	12.75	35.57	26.91
404	11.54	35.46	400	11.60	35.47	27.05
605	7.37	35.02	600	7.45	35.03	27.39
807	5.38	34.97	800	5.40	34.97	27.63
1,012	4.48	34.925	1,000	4.50	34.93	27.69
1,527	3.74	34.90				

Station 4206; June 15; latitude 43°01.5′ N., longitude 46°27′ W., depth 4,207 meters, dynamic height 971.416

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	17.83	36.00	0	17.83	36.00	26.11
27	15.86	36.08	25	15.90	36.08	26.61
52	15.74	36.08	50	15.75	36.08	26.64
79	15.68	36.09	75	15.70	36.09	26.68
104	15.68	36.10	100	15.65	36.10	26.70
158	15.31	36.03	150	15.35	36.05	26.72
210	14.78	35.92	200	14.70	35.94	26.78
314	13.90	35.84	300	14.05	35.86	26.86
421	12.32	35.60	400	12.70	35.65	26.98
628	7.67	35.03	600	8.30	35.07	27.31
836	5.57	35.00	800	5.80	35.00	27.60
1,032	4.72	34.98	1,000	4.80	34.98	27.70
1,500	3.84	34.91				

Station 4207; June 15; latitude 43°23′ N., longitude 46°10′ W., depth 4,663 meters, dynamic height 971.402

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	18.34	35.80	0	18.34	35.80	25.82
27	16.04	36.04	25	16.10	36.04	26.54
53	15.54	35.95	50	15.60	35.96	26.59
80	15.05	35.88	75	15.10	35.89	26.65
106	15.14	35.93	100	15.10	35.92	26.68
161	14.88	35.93	150	14.95	35.93	26.72
214	14.28	35.81	200	14.45	35.84	26.76
320	13.42	35.76	300	13.60	35.78	26.89
416	11.71	35.48	400	12.05	35.53	27.01
621	7.41	35.03	600	7.85	35.04	27.35
824	5.36	34.99	800	5.55	34.99	27.62
1,029	4.15	34.89	1,000	4.25	34.90	27.70
1,537	3.67	34.89				

Station 4208; June 15: latitude 43°34′ N., longitude 46°34′ W., depth 4,427 meters, dynamic height 971.163

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	13.56	33.20	0	13.56	33.20	24.90
27	7.65	33.38	25	7.70	33.34	26.03
53	11.08	34.68	50	11.00	34.52	26.42
80	8.28	34.41	75	8.70	34.45	26.75
107	9.27	34.81	100	9.10	34.73	26.91
161	7.09	34.58	150	7.50	34.61	27.06
214	6.61	34.58	200	6.75	34.58	27.14
321	4.11	34.41	300	4.55	34.43	27.29
390	5.58	34.81	400	5.55	34.82	27.49
578	5.00	34.92	600	4.90	34.92	27.65
760	4.43	34.92	800	4.35	34.92	27.71
952	4.15	34.92	1,000	4.10	34.92	27.74
1,435	3.73	34.90				

Station 4209; June 16; latitude 43°40.5′ N., longitude 47°19′ W., depth 4,042 meters, dynamic height 971.065

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	9.68	33.16	0	9.68	33.16	25.60
26	5.78	33.36	25	6.05	33.35	26.26
52	3.20	33.48	50	3.20	33.47	26.67
78	3.28	33.92	75	3.25	33.87	26.98
104	3.61	34.02	100	3.50	34.00	27.06
156	4.71	34.40	150	4.60	34.37	27.24
208	4.89	34.55	200	4.85	34.53	27.34
312	4.62	34.68	300	4.65	34.66	27.47
396	5.04	34.89	400	5.05	34.90	27.61
595	4.52	34.92	600	4.50	34.92	27.69
795	4.09	34.89	800	4.10	34.89	27.71
994	3.93	34.90	1,000	3.95	34.90	27.73
1,495	3.67	34.89				

Station 4210; June 16; latitude 43°50′ N., longitude 47°54′ W., depth 3,749 meters, dynamic height 971.177

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	10.30	33.81	0	10.30	33.81	25.99
26	10.48	34.64	25	10.50	34.60	26.57
53	10.57	34.86	50	10.55	34.83	26.74
79	11.17	35.08	75	11.05	35.05	26.82
105	11.53	35.19	100	11.50	35.18	26.84
157	10.80	35.11	150	11.00	35.13	26.89
209	8.00	34.75	200	8.30	34.78	27.07
314	7.25	34.82	300	7.35	34.80	27.23
416	6.55	34.92	400	6.65	34.91	27.42
622	5.10	34.94	600	5.25	34.94	27.62
827	4.32	34.90	800	4.40	34.90	27.68
1,032	3.98	34.89	1,000	4.00	34.89	27.72
1,541	3.54	34.86				

Station 4211; June 16; latitude 43°58′ N., longitude 48°23′ W., depth 3,402 meters, dynamic height 971.044

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.22	32.78	0	5.22	32.78	25.91
25	2.64	32.86	25	2.64	32.86	26.23
50	0.09	33.24	50	0.09	33.24	26.71
75	−1.00	33.40	75	−1.00	33.40	26.88
101	−0.28	33.51	100	−0.30	33.50	26.93
151	−0.22	33.75	150	−0.20	33.75	27.13
201	1.13	34.09	200	1.10	34.08	27.32
302	2.47	34.51	300	2.45	34.50	27.55
382	3.72	34.74	400	3.75	34.75	27.63
580	3.65	34.82	600	3.60	34.82	27.71
761	3.38	34.81	800	3.40	34.81	27.72
953	3.44	34.84	1,000	3.45	34.85	27.74
1,439	3.49	34.89				

Station 4212; June 16; latitude 44°07′ N., longitude 48°50′ W., depth 1,752 meters, dynamic height 971.035

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	3.23	32.88	0	3.23	32.88	26.20
24	1.35	33.00	25	1.20	33.01	26.46
49	−0.97	33.34	50	−1.00	33.35	26.84
73	−1.30	33.45	75	−1.30	33.46	26.94
97	−1.21	33.51	100	−1.15	33.51	26.98
146	−0.72	33.66	150	−0.70	33.67	27.09
195	−0.08	33.84	200	0.00	33.86	27.21
292	1.92	34.42	300	2.00	34.44	27.54
383	2.50	34.58	400	2.60	34.60	27.62
577	------	34.74	600	3.10	34.75	27.70
774	3.27	34.81	800	3.30	34.82	27.74
968	3.40	34.835	1,000	3.40	34.84	27.74
1,454	3.48	34.84				

STATIONS OCCUPIED IN 1950—Continued

Station 4213; June 16; latitude 44°11′ N., longitude 48°59′ W., depth 714 meters, dynamic height 971.039

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.44	32.75	0	5.44	32.75	25.86
27	−0.63	33.20	25	−0.40	33.17	26.67
53	−1.44	33.34	50	−1.40	33.33	26.83
80	−1.54	33.40	75	−1.50	33.39	26.89
106	−1.41	33.43	100	−1.45	33.42	26.91
160	0.03	33.85	150	−0.25	33.77	27.15
213	1.10	34.14	200	0.90	34.08	27.33
319	1.68	34.36	300	1.60	34.31	27.47
393	2.69	34.64	400	2.75	34.65	27.65
543	2.98	34.70	(600)	3.05	34.72	27.68

Station 4214; June 16; latitude 44°11′ N., longitude 49°04′ W., depth 174 meters, dynamic height 971.078

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.82	32.70	0	5.82	32.70	25.78
25	3.42	32.82	25	3.42	32.82	26.13
49	−0.03	33.10	50	−0.15	33.11	26.61
74	−1.23	33.25	75	−1.25	33.25	26.76
99	−1.41	33.30	100	−1.40	33.30	26.80
138	−1.21	33.44	(150)	−1.15	33.48	26.95

Station 4215; June 16; latitude 44°12′ N., longitude 49°11′ W., depth 88 meters, dynamic height 971.064

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.18	32.69	0	6.18	32.69	25.72
26	1.62	32.96	25	1.85	32.95	26.36
52	−0.91	33.22	50	−0.80	33.20	26.71
			(75)	−1.20	33.40	26.89

Station 4216; June 17; latitude 44°14′ N., longitude 49°23′ W., depth 57 meters, dynamic height 971.068

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.31	32.78	0	7.31	32.78	25.66
24	2.53	32.96	25	2.40	32.96	26.33
48	−0.06	33.16	50	−0.25	33.17	26.66

Station 4217; June 17; latitude 44°58.5′ N., longitude 49°18′ W., depth 73 meters, dynamic height 971.079

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	6.34	32.73	0	6.34	32.73	25.74
25	0.93	32.94	25	0.93	32.94	26.42
50	−0.33	33.02	50	−0.33	33.02	26.54

Station 4218; June 17; latitude 44°57′ N., longitude 49°12′ W., depth 270 meters, dynamic height 971.067

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.85	32.71	0	5.85	32.71	25.79
25	−0.36	33.01	25	−0.36	33.01	26.54
50	−1.53	33.20	50	−1.53	33.20	26.73
75	−1.60	33.22	75	−1.60	33.22	26.75
100	−1.59	33.24	100	−1.59	33.24	26.76
150	−1.09	33.50	150	−1.09	33.50	26.96
200	0.12	33.87	200	0.12	33.87	27.21

Station 4219; June 17; latitude 44°55′ N., longitude 48°58′ W., depth 649 meters, dynamic height 971.081

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.65	32.72	0	5.65	32.72	25.82
25	3.52	32.78	25	3.52	32.78	26.09
50	−1.51	33.22	50	−1.51	33.22	26.75
75	−1.52	33.34	75	−1.52	33.34	26.85
100	−1.43	33.40	100	−1.43	33.40	26.90
150	−0.96	33.56	150	−0.96	33.56	27.01
200	−0.28	33.76	200	−0.28	33.76	27.14
300	2.23	34.50	300	2.23	34.50	27.57
398	2.55	34.59	400	2.55	34.59	27.62
596	2.78	34.66	600	2.80	34.66	27.65

Station 4220; June 17; latitude 44°52′ N., longitude 48°42′ W., depth 2,062 meters, dynamic height 970.994

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	4.41	32.87	0	4.41	32.87	26.08
27	1.67	33.26	25	1.85	33.23	26.59
53	0.25	33.51	50	0.40	33.49	26.89
79	−0.40	33.56	75	−0.30	33.55	26.97
105	−0.80	33.63	100	−0.75	33.61	27.04
159	0.83	34.00	150	0.65	33.93	27.22
211	1.48	34.28	200	1.35	34.23	27.42
316	2.60	34.63	300	2.45	34.59	27.62
417	2.80	34.70	400	2.75	34.69	27.68
626	3.33	34.80	600	3.25	34.79	27.71
838	3.36	34.82	800	3.35	34.82	27.73
1,049	3.43	34.85	1,000	3.40	34.84	27.74
1,578	3.47	34.88				

Station 4221; June 17; latitude 44°49′ N., longitude 48°26′ W., depth 2,418 meters, dynamic height 970.930

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.77	33.12	0	7.77	33.12	25.85
25	2.61	33.40	25	2.61	33.40	26.67
50	1.32	33.82	50	1.32	33.82	27.10
74	2.57	34.22	75	2.55	34.23	27.33
99	2.21	34.33	100	2.20	34.33	27.41
149	3.53	34.60	150	3.55	34.60	27.53
198	4.26	34.79	200	4.25	34.80	27.62
297	4.29	34.87	300	4.30	34.87	27.67
379	3.86	34.86	400	3.85	34.86	27.71
572	3.75	34.86	600	3.75	34.86	27.72
766	3.60	34.88	800	3.60	34.88	27.75
961	3.52	34.87	1,000	3.50	34.87	27.76
1,452	3.53	34.90				

Station 4222; June 17; latitude 44°41′ N., longitude 47°47′ W., depth 3,310 meters, dynamic height 970.934

Observed values: Depth, meters	Temperature °C.	Salinity ‰	Scaled values: Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.52	32.85	0	7.52	32.85	25.67
24	3.21	33.30	25	3.00	33.31	26.56
47	0.71	33.68	50	0.70	33.72	27.06
71	0.56	33.94	75	0.60	33.99	27.27
94	1.50	34.20	100	1.55	34.24	27.41
141	1.88	34.42	150	1.95	34.44	27.55
188	2.35	34.56	200	2.45	34.54	27.58
282	3.00	34.71	300	3.05	34.73	27.68
350	3.17	34.75	400	3.35	34.79	27.70
530	3.75	34.89	600	3.70	34.88	27.74
715	3.60	34.87	800	3.55	34.87	27.75
904	3.50	34.87	1,000	3.50	34.87	27.76
1,393	3.55	34.90				

STATIONS OCCUPIED IN 1950—Continued

Station 4223; June 17; latitude 44°37′ N., longitude 47°10′ W., depth 3,731 meters, dynamic height 971.055

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.11	32.67	0	7.11	32.67	25.60
25	1.49	32.91	25	1.49	32.91	26.35
49	−1.58	33.22	50	−1.60	33.23	26.75
74	−1.61	33.34	75	−1.60	33.34	26.85
98	−1.38	33.44	100	−1.35	33.45	26.93
146	−0.58	33.71	150	−0.50	33.75	27.14
196	3.56	34.32	200	3.55	34.33	27.31
294	2.03	34.39	300	2.05	34.43	27.53
362	5.16	34.90	400	5.05	34.91	27.62
547	4.49	34.91	600	4.35	34.91	27.70
735	4.11	34.91	800	4.00	34.90	27.73
926	3.75	34.89	1,000	3.70	34.89	27.75
1,420	3.56	34.89				

Station 4224; June 18; latitude 44°33′ N., longitude 46°32′ W., depth 3,841 meters, dynamic height 971.082

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.88	32.83	0	7.88	32.83	25.62
25	−0.22	33.16	25	−0.22	33.16	26.65
51	−1.28	33.34	50	−1.30	33.34	26.84
75	−1.34	33.37	75	−1.34	33.37	26.86
101	0.05	33.52	100	0.00	33.52	26.94
151	2.65	33.95	150	2.65	33.94	27.09
202	3.46	34.17	200	3.45	34.16	27.19
303	4.44	34.62	300	4.45	34.61	27.45
390	3.99	34.66	400	4.00	34.67	27.55
586	4.40	34.90	600	4.10	34.90	27.68
783	4.09	34.89	800	4.10	34.89	27.71
980	4.00	34.90	1,000	4.00	34.90	27.73
1,480	3.58	34.90				

Station 4225; June 18; latitude 44°28′ N., longitude 46°00′ W., depth 3,749 meters, dynamic height 971.087

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	8.62	32.78	0	8.62	32.78	25.45
25	1.57	33.02	25	1.57	33.02	26.44
50	−1.50	33.31	50	−1.50	33.31	26.82
75	−1.28	33.36	75	−1.28	33.36	26.85
100	−1.20	33.44	100	−1.20	33.44	26.91
150	1.46	33.77	150	1.46	33.77	27.05
199	1.88	33.93	200	1.90	33.93	27.14
299	1.21	34.17	300	1.20	34.17	27.39
382	4.73	34.83	400	4.75	34.85	27.60
575	4.49	34.92	600	4.40	34.91	27.69
768	3.69	34.85	800	3.70	34.85	27.72
962	3.79	34.90	1,000	3.75	34.90	27.75
1,451	3.56	34.89				

Station 4226; June 18, latitude 44°21.5′ N., longitude 45°28′ W., depth 4,244 meters, dynamic height 971.166

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	14.30	33.02	0	14.30	33.02	24.62
26	7.06	33.35	25	7.05	33.33	26.11
51	10.98	34.75	50	10.80	34.64	26.55
76	12.06	35.27	75	12.05	35.26	26.80
101	11.91	35.36	100	11.95	35.36	26.90
153	7.82	34.62	150	8.15	34.67	27.01
204	6.15	34.44	200	6.25	34.44	27.10
305	4.54	34.43	300	4.55	34.43	27.29
386	6.54	34.95	400	6.40	34.95	27.48
586	4.24	34.82	600	4.20	34.82	27.65
793	4.14	34.90	800	4.15	34.90	27.71
997	4.12	34.93	1,000	4.10	34.93	27.74
1,515	3.75	34.92				

Station 4227; June 18; latitude 44°49′ N., longitude 45°15′ W., depth 4,079 meters, dynamic height 971.237

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	15.76	35.63	0	15.76	35.63	26.30
24	14.67	35.64	25	14.65	35.64	26.56
48	14.30	35.66	50	14.25	35.66	26.66
72	14.06	35.69	75	14.00	35.69	26.73
96	13.72	35.66	100	13.60	35.65	26.79
145	12.99	35.57	150	13.00	35.57	26.85
193	12.92	35.65	200	12.75	35.63	26.95
289	10.50	35.27	300	10.30	35.25	27.11
333	9.63	35.18	400	8.35	35.08	27.30
507	6.86	34.99	600	5.95	34.98	27.56
688	5.29	34.97	800	4.75	34.96	27.69
875	4.53	34.95	1,000	4.25	34.94	27.73
1,366	3.83	34.92				

Station 4228; June 18; latitude 45°19′ N., longitude 45°15′ W., depth 4,024 meters, dynamic height 971.233

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	15.12	35.67	0	15.12	35.67	26.18
24	14.77	35.70	25	14.75	35.70	26.58
48	14.09	35.60	50	14.00	35.60	26.67
72	13.88	35.64	75	13.90	35.65	26.72
96	14.42	35.80	100	14.35	35.80	26.75
144	13.49	35.66	150	13.40	35.65	26.83
192	12.81	35.56	200	12.00	35.55	27.04
288	11.29	35.42	300	11.10	35.40	27.09
287	11.38	35.43	400	9.05	35.10	27.21
429	8.45	35.04	600	5.80	34.97	27.58
572	6.08	34.97	800	4.80	34.95	27.68
732	5.11	34.96	1,000	4.10	34.91	27.73
1,162	3.82	34.89				

Station 4229; June 19; latitude 45°21.5′ N., longitude 45°58′ W., depth 3,566 meters, dynamic height 971.005

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	8.07	33.16	0	8.07	33.16	25.84
25	5.80	33.14	25	5.80	33.14	26.13
50	1.05	33.36	50	1.05	33.36	26.75
75	0.46	33.61	75	0.46	33.61	26.98
99	0.66	33.82	100	0.70	33.83	27.14
148	2.67	34.26	150	2.70	34.27	27.35
198	3.09	34.53	200	3.15	34.54	27.52
297	5.15	34.93	300	5.15	34.93	27.62
434	4.74	34.95	400	4.85	34.95	27.67
652	4.19	34.92	600	4.30	34.93	27.71
871	3.86	34.91	800	3.95	34.91	27.74
1,100	3.73	34.90	1,000	3.80	34.90	27.75
1,688	3.38	34.90				

Station 4230; June 19; latitude 45°29′ N., longitude 46°35′ W., depth 2,780 meters, dynamic height 970.929

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	8.37	33.49	0	8.37	33.49	26.06
22	7.27	33.70	25	7.00	33.77	26.48
43	5.58	34.16	50	5.40	34.25	27.05
64	5.16	34.40	75	4.95	34.45	27.27
85	4.82	34.49	100	4.60	34.54	27.37
129	4.30	34.63	150	4.10	34.66	27.53
172	3.95	34.68	200	3.80	34.69	27.58
257	3.53	34.71	300	3.35	34.73	27.65
275	3.40	34.72	400	3.10	34.77	27.27
423	3.11	34.78	600	3.10	34.81	27.75
579	3.10	34.81	800	3.25	34.84	27.75
752	3.26	34.84	1,000	3.30	34.86	27.77
1,233	3.33	34.88				

STATIONS OCCUPIED IN 1950—Continued

Station 4231; June 19; latitude 45°20.5′ N., longitude 47°32′ W., depth 2,469 meters, dynamic height 970.975

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.62	32.56	0	6.62	32.56	25.56
26	2.82	33.29	25	2.90	33.26	26.53
51	−0.72	33.52	50	−0.70	33.51	26.96
78	2.42	34.02	75	2.00	33.97	27.17
103	3.18	34.20	100	3.15	34.18	27.23
155	3.21	34.38	150	3.20	34.36	27.38
206	4.24	34.64	200	4.20	34.62	27.49
309	4.42	34.88	300	4.40	34.88	27.66
404	4.08	34.87	400	4.10	34.87	27.70
605	3.57	34.82	600	3.55	34.82	27.71
807	3.66	34.87	800	3.65	34.87	27.74
1,012	3.63	34.89	1,000	3.65	34.89	27.75
1,527	3.47	34.90				

Station 4232; June 19; latitude 45°35′ N., longitude 47°49′ W., depth 1,418 meters, dynamic height 970.905

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
3	5.63	33.11	0	5.65	33.11	26.12
28	1.80	33.62	25	1.95	33.55	26.84
53	1.42	34.01	50	1.45	33.97	27.21
77	1.30	34.16	75	1.30	34.15	27.36
102	1.49	34.28	100	1.45	34.27	27.45
152	2.19	34.53	150	2.15	34.52	27.60
202	2.56	34.63	200	2.55	34.63	27.65
301	2.95	34.74	300	2.95	34.74	27.70
397	3.09	34.77	400	3.10	34.77	27.72
596	3.59	34.86	600	3.60	34.86	27.74
796	3.46	34.845	800	3.45	34.85	27.74
995	3.43	34.845	1,000	3.45	34.85	27.74
1,391	3.40	34.88				

Station 4233; June 19; latitude 45°42′ N., longitude 48°01′ W., depth 622 meters, dynamic height 970.972

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.62	32.50	0	4.62	32.50	25.75
25	1.17	33.34	25	1.17	33.34	26.72
50	−1.26	33.48	50	−1.26	33.48	26.95
75	−0.27	33.79	75	−0.27	33.79	27.16
100	0.58	34.05	100	0.58	34.05	27.32
150	1.46	34.30	150	1.46	34.30	27.47
201	1.83	34.41	200	1.80	34.41	27.51
301	2.54	34.61	300	2.55	34.61	27.64
382	2.66	34.63	400	2.70	34.64	27.64
594	3.03	34.74	600	3.05	34.74	27.69

Station 4234; June 19; latitude 45°46′ N., longitude 48°08′ W., depth 166 meters, dynamic height 971.043

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	4.98	32.64	0	4.98	32.64	25.83
25	0.86	33.02	25	0.86	33.02	26.49
49	−1.74	33.25	50	−1.75	33.26	26.78
74	−1.59	33.37	75	−1.60	33.38	26.88
99	−1.22	33.52	100	−1.20	33.52	26.99
148	−0.90	33.60	150	−0.90	33.60	27.04

Station 4235; June 19–20; latitude 45°48′ N., longitude 48°13′ W., depth 116 meters, dynamic height 971.048

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	5.47	32.76	0	5.47	32.76	25.86
25	2.12	33.08	25	2.12	33.08	26.45
51	−1.21	33.36	50	−1.20	33.36	26.85
76	−1.46	33.38	75	−1.45	33.38	26.87
102	−1.44	33.37	100	−1.45	33.38	26.87

Station 4236; June 20; latitude 45°58′ N., longitude 48°29′ W., depth 93 meters, dynamic height 971.064

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.11	32.70	0	6.11	32.70	25.75
25	2.76	32.84	25	2.76	32.84	26.21
49	−0.79	33.02	50	−0.90	33.03	26.57
74	−1.54	33.23	75	−1.55	33.24	26.76

Station 4237; June 20; latitude 46°07′ N., longitude 48°43′ W., depth 77 meters, dynamic height 971.064

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.37	32.70	0	6.37	32.70	25.71
17	4.64	32.82	25	3.30	32.85	26.16
43	0.00	32.96	50	−0.90	33.02	26.57
68	−1.42	33.18	75	−1.45	33.34	26.84

Station 4238; June 20; latitude 46°17′ N., longitude 49°00′ W., depth 66 meters, dynamic height 971.063

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.41	32.87	0	6.41	32.87	25.84
27	3.48	32.82	25	3.90	32.82	26.09
54	−0.93	33.14	50	−0.75	33.08	26.61

Station 4239; July 13; latitude 50°01′ N., longitude 49°02′ W., depth 1,934 meters, dynamic height 970.858

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	7.83	33.40	0	7.83	33.40	26.07
23	5.37	33.54	25	5.05	33.57	26.56
47	2.76	34.28	50	2.75	34.33	27.39
70	2.81	34.56	75	2.90	34.61	27.61
93	3.09	34.71	100	3.10	34.73	27.68
140	3.11	34.78	150	3.10	34.79	27.73
187	3.14	34.81	200	3.15	34.82	27.75
280	3.18	34.83	300	3.20	34.83	27.75
334	3.20	34.83	400	3.20	34.83	27.75
508	3.21	34.84	600	3.20	34.84	27.76
686	3.20	34.85	800	3.20	34.85	27.77
864	3.23	34.86	1,000	3.25	34.86	27.77
1,319	3.27	34.88				

Station 4240; July 13; latitude 49°50′ N., longitude 49°24′ W., depth 1,454 meters, dynamic height 970.851

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.80	32.82	0	6.80	32.82	25.75
26	3.10	33.60	25	3.15	33.52	26.72
51	3.29	34.19	50	3.30	34.48	27.46
78	3.06	34.67	75	3.10	34.66	27.63
103	3.06	34.74	100	3.05	34.73	27.68
156	3.13	34.79	150	3.10	34.78	27.72
208	3.19	34.81	200	3.20	34.81	27.74
311	3.20	34.83	300	3.20	34.83	37.75
399	3.20	34.84	400	3.20	34.84	27.76
600	3.20	34.85	600	3.20	34.85	27.77
804	3.20	34.86	800	3.20	34.86	27.78
1,010	3.19	34.86	1,000	3.20	34.86	27.78
1,388	3.27	34.88				

STATIONS OCCUPIED IN 1950—Continued

Station 4241; July 13; latitude 49°37.5′ N., longitude 50°02′ W., depth 640 meters, dynamic height 970.872

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	5.86	32.74	0	5.86	32.74	25.81
23	1.81	33.88	25	1.60	33.91	27.15
46	0.66	34.08	50	0.70	34.10	27.36
68	1.19	34.24	75	1.35	34.28	27.46
91	1.67	34.37	100	1.85	34.41	27.53
137	2.58	34.56	150	2.80	34.61	27.61
182	3.26	34.71	200	3.30	34.73	27.66
273	3.34	34.77	300	3.35	34.78	27.69
397	3.36	34.82	400	3.35	34.82	27.73
597	3.20	34.85	600	3.20	34.85	27.77

Station 4242; July 13; latitude 49°31′ N., longitude 50°34′ W., depth 334 meters, dynamic height 970.930

Depth	Temp.	Salinity	Depth	Temp.	Salinity	σ_t
0	7.43	32.65	0	7.43	32.65	25.54
26	1.92	33.11	25	2.25	33.06	26.42
52	−1.16	33.63	50	−1.15	33.61	27.06
78	−0.44	33.86	75	−0.55	33.85	27.22
104	0.28	34.03	100	0.20	34.00	27.31
157	1.01	34.25	150	0.90	34.22	27.45
209	2.15	34.48	200	2.00	34.45	27.55
313	3.12	34.74	300	3.05	34.72	27.68

Station 4243; July 13; latitude 49°20.5′ N., longitude 51°04′ W., depth 334 meters, dynamic height 970.972

Depth	Temp.	Salinity	Depth	Temp.	Salinity	σ_t
0	8.66	32.68	0	8.66	32.68	25.39
24	6.49	32.80	25	6.25	32.82	25.82
47	−0.23	33.40	50	−0.55	33.43	26.88
71	−1.24	33.57	75	−1.20	33.60	27.05
4	−0.89	33.75	100	−0.75	33.80	27.19
141	0.28	34.06	150	0.45	34.10	27.37
188	1.13	34.23	200	1.25	34.27	27.47
301	2.56	34.60	300	2.55	34.60	27.63

Station 4244; July 13; latitude 49°09′ N., longitude 51°33′ W., depth 318 meters, dynamic height 971.012

Depth	Temp.	Salinity	Depth	Temp.	Salinity	σ_t
0	8.46	31.48	0	8.46	31.48	24.48
25	1.82	32.84	25	1.82	32.84	26.28
50	−1.70	33.32	50	−1.70	33.32	26.83
74	−1.73	33.36	75	−1.70	33.36	26.86
99	−1.64	33.44	100	−1.65	33.44	26.93
149	−1.04	33.70	150	−1.05	33.70	27.12
199	0.19	34.02	200	0.25	34.03	27.33
298	2.22	34.48	300	2.25	34.49	27.56

Station 4245; July 13; latitude 49°04′ N., longitude 51°52′ W., depth 308 meters, dynamic height 971.035

Depth	Temp.	Salinity	Depth	Temp.	Salinity	σ_t
0	8.01	31.44	0	8.01	31.44	24.51
25	−0.23	32.65	25	−0.23	32.65	26.24
50	−1.75	33.16	50	−1.75	33.16	26.70
74	−1.78	33.24	75	−1.75	33.24	26.77
99	−1.66	33.32	100	−1.65	33.32	26.83
148	−1.31	33.58	150	−1.30	33.59	27.04
198	−0.50	33.86	200	−0.45	33.87	27.24
297	1.49	34.31	300	1.55	34.32	27.48

Station 4246; July 14; latitude 49°01′ N., longitude 52°07′ W., depth 335 meters, dynamic height 971.035

Depth	Temp.	Salinity	Depth	Temp.	Salinity	σ_t
0	7.95	31.68	0	7.95	31.68	24.70
24	2.07	32.62	25	1.95	32.67	26.13
49	−0.75	33.16	50	−0.80	33.17	26.68
73	−1.49	33.24	75	−1.50	33.25	26.77
98	−1.62	33.36	100	−1.60	33.37	26.87
146	−1.26	33.58	150	−1.20	33.60	27.05
195	−0.37	33.87	200	−0.25	33.89	27.24
293	1.36	34.27	300	1.45	34.30	27.47

Station 4247; July 14; latitude 48°50′ N., longitude 52°33′ W., depth 330 meters, dynamic height 971.064

Depth	Temp.	Salinity	Depth	Temp.	Salinity	σ_t
0	8.57	31.56	0	8.57	31.56	24.52
23	0.20	32.65	25	−0.25	32.70	26.28
47	−1.62	33.09	50	−1.65	33.11	26.66
70	−1.67	33.17	75	−1.65	33.18	26.71
93	−1.76	33.21	100	−1.75	33.22	26.76
140	−1.73	33.28	150	−1.75	33.30	26.81
187	−1.64	33.37	200	−1.15	33.46	26.94
280	1.60	34.34	(300)	2.10	34.48	27.56

Station 4248; July 14; latitude 48°48′ N., longitude 52°37′ W., depth 229 meters, dynamic height 971.067

Depth	Temp.	Salinity	Depth	Temp.	Salinity	σ_t
0	8.58	31.66	0	8.58	31.66	24.60
24	0.04	32.82	25	−0.20	32.86	26.41
48	−1.67	33.10	50	−1.70	33.11	26.66
72	−1.73	33.17	75	−1.70	33.18	26.72
96	−1.75	33.22	100	−1.75	33.23	26.76
144	−1.74	33.28	150	−1.75	33.29	26.80
192	−1.63	33.36	(200)	−1.60	33.38	26.88

Station 4249; July 14; latitude 48°46′ N., longitude 52°14′ W., depth 176 meters, dynamic height 971.075

Depth	Temp.	Salinity	Depth	Temp.	Salinity	σ_t
0	9.23	31.37	0	9.23	31.37	24.26
24	−0.93	32.90	25	−1.00	32.93	26.49
48	−1.66	33.12	50	−1.70	33.12	26.67
72	−1.77	33.18	75	−1.75	33.18	26.72
96	−1.76	33.20	100	−1.75	33.20	26.74
144	−1.75	33.23	150	−1.75	33.23	26.76

Station 4250; July 14; latitude 48°45′ N., longitude 52°58′ W., depth 108 meters, dynamic height 971.103

Depth	Temp.	Salinity	Depth	Temp.	Salinity	σ_t
0	10.00	30.82	0	10.00	30.82	23.74
24	2.23	32.13	25	1.95	32.30	25.83
49	−1.27	32.92	50	−1.30	32.94	26.51
73	−1.60	33.09	75	−1.60	33.10	26.65
			(100)	−1.75	33.19	26.73

Station 4251; July 14; latitude 48°37.5′ N., longitude 52°44′ W., depth 228 meters, dynamic height 971.081

Depth	Temp.	Salinity	Depth	Temp.	Salinity	σ_t
0	9.35	31.16	0	9.35	31.16	24.08
24	−0.21	32.73	25	−0.45	32.76	26.34
49	−1.51	33.09	50	−1.55	33.09	26.64
73	−1.74	33.18	75	−1.75	33.18	26.72
97	−1.78	33.23	100	−1.75	33.23	26.76
146	−1.75	33.23	150	−1.75	33.24	26.77
			(200)	−1.50	33.29	26.80

Station 4252; July 14; latitude 48°35′ N., longitude 52°38′ W., depth 242 meters, dynamic height 971.061

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	8.81	31.50	0	8.81	31.50	24.44
24	−0.50	32.74	25	−0.65	32.78	26.37
49	−1.55	33.08	50	−1.55	33.09	26.64
73	−1.70	33.18	75	−1.70	33.18	26.72
97	−1.72	33.23	100	−1.70	33.24	26.77
146	−1.69	33.33	150	−1.70	33.34	26.85
195	−1.57	33.44	200	−1.50	33.45	26.94
229	−1.04	33.62				

Station 4253; July 14; latitude 48°23′ N., longitude 52°14′ W., depth 198 meters, dynamic height 971.069

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	9.07	31.07	0	9.07	31.07	24.06
25	−0.28	32.76	25	−0.28	32.76	26.33
50	−1.71	33.16	50	−1.71	33.16	26.70
75	−1.77	33.20	75	−1.77	33.20	26.74
100	−1.74	33.21	100	−1.74	33.21	26.75
150	−1.75	33.25	150	−1.75	33.25	26.78
181	−1.57	33.38				

Station 4254; July 14; latitude 48°13′ N., longitude 51°57′ W., depth 190 meters, dynamic height 971.063

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	9.80	30.95	0	9.80	30.95	23.86
25	0.04	32.78	25	0.04	32.78	26.34
50	−1.20	33.12	50	−1.20	33.12	26.66
75	−1.69	33.23	75	−1.69	33.23	26.75
101	−1.72	33.30	100	−1.70	33.30	26.81
151	−1.53	33.43	150	−1.55	33.43	26.92
176	−1.45	33.48				

Station 4255; July 14; latitude 48°04.5′ N., longitude 51°36′ W., depth 210 meters, dynamic height 971.064

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	9.93	31.32	0	9.93	31.32	24.12
25	0.69	32.56	25	0.69	32.56	26.13
49	−1.34	33.10	50	−1.35	33.10	26.64
74	−1.64	33.22	75	−1.65	33.22	26.75
99	−1.71	33.31	100	−1.70	33.31	26.82
148	−1.46	33.42	150	−1.45	33.42	26.91
183	−1.32	33.50	(200)	−1.30	33.54	27.00

Station 4256; July 14; latitude 47°56′ N., longitude 51°16′ W., depth 165 meters, dynamic height 971.066

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	9.55	31.54	0	9.55	31.54	24.34
25	2.86	32.30	25	2.86	32.30	25.76
49	−1.30	33.10	50	−1.35	33.11	26.65
74	−1.68	33.23	75	−1.65	33.23	26.75
99	−1.66	33.32	100	−1.65	33.32	26.83
148	−1.17	33.51	150	−1.15	33.51	26.98

Station 4257; July 14; latitude 47°48′ N., longitude 50°56′ W., depth 122 meters, dynamic height 971.067

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	9.43	31.60	0	9.43	31.60	24.42
25	4.86	32.51	25	4.86	32.51	25.71
50	−0.82	33.01	50	−0.82	33.01	26.56
75	−1.52	33.22	75	−1.52	33.22	26.75
100	−1.43	33.33	100	−1.43	33.33	26.83

Station 4258; July 14; latitude 47°40′ N., longitude 50°37′ W., depth 174 meters, dynamic height 971.068

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	9.17	31.87	0	9.17	31.87	24.67
24	6.67	32.34	25	6.40	32.35	25.44
49	−0.80	33.03	50	−0.90	33.05	26.59
73	−1.53	33.27	75	−1.55	33.29	26.80
97	−1.37	33.42	100	−1.35	33.42	26.91
146	−1.24	33.46	150	−1.20	33.46	26.94

Station 4259; July 15; latitude 47°33′ N., longitude 50°17′ W., depth 103 meters, dynamic height 971.056

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	8.11	32.45	0	8.11	32.45	25.28
25	5.90	32.70	25	5.90	32.70	25.77
49	0.09	32.98	50	0.05	32.99	26.51
74	−1.17	33.20	75	−1.20	33.21	26.73
			(100)	−1.45	33.40	26.89

Station 4260; July 15; latitude 47°25.5′ N., longitude 49°54′ W., depth 110 meters, dynamic height 971.055

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.44	32.56	0	7.44	32.56	25.46
25	5.80	32.71	25	5.80	32.71	25.79
50	−0.20	33.02	50	−0.20	33.02	26.54
75	−0.82	33.11	75	−0.82	33.11	26.63
100	−1.30	33.40	100	−1.30	33.40	26.89

Station 4261; July 15; latitude 47°44′ N., longitude 49°47′ W., depth 119 meters, dynamic height 971.0[illegible]0

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	8.81	31.82	0	8.81	31.82	24.68
25	4.74	32.59	25	4.74	32.59	25.82
50	−0.85	33.10	50	−0.85	33.10	26.55
76	−1.24	33.28	75	−1.25	33.28	26.78
101	−1.32	33.44	100	−1.30	33.44	26.92

Station 4262; July 15; latitude 47°54 N., longitude 49°41′ W., depth 169 meters, dynamic height 971.047

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	9.22	31.64	0	9.22	31.64	24.48
25	1.30	32.75	25	1.30	32.75	25.24
50	−1.71	33.24	50	−1.71	33.24	26.77
75	−1.77	33.30	75	−1.77	33.30	26.81
101	−1.70	33.38	100	−1.70	33.38	26.88
151	−0.23	33.82	150	−0.25	33.81	27.18

Station 4263; July 28; latitude 47°21.5′ N., longitude 50°01′ W., depth 96 meters, dynamic height 971.066

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	11.06	32.15	0	11.06	32.15	24.57
24	5.87	32.74	25	5.70	32.75	25.84
49	0.13	33.01	50	0.00	33.01	26.53
73	−0.90	33.15	75	−0.95	33.16	26.68

Station 4264; July 28; latitude 47°42′ N., longitude 49°56′ W., depth 114 meters, dynamic height 971.069

Observed values			Scaled values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	11.33	31.64	0	11.33	31.64	24.13
25	4.91	32.56	25	4.91	32.56	25.78
50	−0.83	33.04	50	−0.83	33.04	26.58
74	−1.65	33.25	75	−1.60	33.26	26.78
99	−1.36	33.45	100	−1.35	33.46	26.94

Station 4265; July 28; latitude 47°56′ N., longitude 49°48′ W., depth 168 meters, dynamic height 971.046

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	10.67	32.03	0	10.67	32.03	24.55
25	2.44	32.68	25	2.44	32.68	26.10
49	−0.85	33.26	50	−0.90	33.27	26.77
74	−1.58	33.38	75	−1.55	33.39	26.89
99	−1.44	33.50	100	−1.45	33.50	26.98
148	−0.38	33.84	150	−0.35	33.85	27.21

Station 4266; July 28; latitude 48°11′ N., longitude 49°42′ W., depth 218 meters, dynamic height 971.055

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	10.63	31.85	0	10.63	31.85	24.41
25	−0.70	33.01	25	−0.70	33.01	26.56
49	−1.73	33.18	50	−1.73	33.18	26.72
74	−1.75	33.24	75	−1.75	33.24	26.77
99	−1.69	33.32	100	−1.70	33.32	26.83
148	−1.39	33.53	150	−1.35	33.54	27.00
197	0.12	33.97	200	0.25	34.00	27.31

Station 4267; July 28; latitude 48°30.5′ N., longitude 49°30′ W., depth 613 meters, dynamic height 970.942

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	9.89	32.31	0	9.89	32.31	24.90
24	1.48	33.37	25	1.40	33.40	26.76
49	−0.36	33.82	50	−0.35	33.83	27.19
73	0.28	34.01	75	0.30	34.03	27.32
97	0.83	34.19	100	0.85	34.20	27.43
146	1.93	34.39	150	2.00	34.40	27.51
194	2.94	34.60	200	3.05	34.62	27.60
291	3.46	34.76	300	3.45	34.77	27.68
360	3.40	34.78	400	3.40	34.79	27.70
552	3.35	34.80	(600)	3.35	34.80	27.71

Station 4268; July 28; latitude 48°36.5′ N., longitude 49°22′ W., depth 1,078 meters, dynamic height 970.892

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.93	31.79	0	8.93	31.79	24.64
25	3.86	33.96	25	3.86	33.96	26.99
51	2.83	34.36	50	2.80	34.35	27.40
76	2.99	34.57	75	3.00	34.57	27.57
102	3.07	34.64	100	3.05	34.64	27.61
151	3.26	34.72	150	3.25	34.72	27.66
202	3.28	34.76	200	3.30	34.76	27.69
304	3.35	34.80	300	3.35	34.80	27.71
353	3.26	34.80	400	3.25	34.80	27.72
554	3.21	34.80	600	3.20	34.81	27.74
770	3.24	34.84	800	3.25	34.84	27.75
941	3.24	34.85	(1,000)	3.25	34.85	27.76

Station 4269; July 28; latitude 48°57.5′ N., longitude 49°10′ W., depth 1,719 meters, dynamic height 970.861

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	10.22	33.21	0	10.22	33.21	25.55
26	4.17	33.88	25	4.50	33.87	26.87
51	3.16	34.55	50	3.15	34.50	27.49
77	3.15	34.69	75	3.20	34.68	27.63
103	3.20	34.74	100	3.20	34.74	27.68
153	3.14	34.78	150	3.15	34.78	27.71
204	3.15	34.79	200	3.15	34.79	27.72
307	3.21	34.81	300	3.20	34.81	27.74
406	3.21	34.82	400	3.20	34.82	27.75
613	3.21	34.84	600	3.20	34.84	27.76
822	3.20	34.84	800	3.20	34.84	27.76
1,027	3.20	34.84	1,000	3.20	34.84	27.76
1,534	3.29	34.87	1,500	3.30	34.87	27.78

Station 4270; July 29; latitude 49°24′ N., longitude 48°58′ W., depth 1,874 meters, dynamic height 970.861

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	9.61	33.78	0	9.61	33.78	26.08
23	6.81	33.92	25	6.40	33.95	26.69
46	3.85	34.43	50	3.65	34.46	27.41
69	3.28	34.59	75	3.25	34.62	27.58
93	3.21	34.69	100	3.20	34.70	27.65
138	3.19	34.76	150	3.20	34.77	27.71
184	3.19	34.80	200	3.20	34.80	27.73
277	3.24	34.82	300	3.25	34.82	27.74
320	3.23	34.82	400	3.25	34.83	27.74
490	3.23	34.84	600	3.25	34.85	27.76
667	3.28	34.85	800	3.25	34.86	27.77
845	3.23	34.86	1,000	3.25	34.87	27.78
1,302	3.27	34.88	(1,500)	3.25	34.89	27.79

Station 4271; July 29; latitude 49°58′ N., longitude 48°46′ W., depth 2,012 meters, dynamic height 970.861

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	9.04	33.49	0	9.01	33.49	25.95
26	4.50	34.07	25	4.60	34.05	26.99
52	3.67	34.53	50	3.75	34.50	27.43
78	3.25	34.65	75	3.30	34.64	27.59
104	3.22	34.72	100	3.20	34.71	27.66
156	3.27	34.78	150	3.25	34.78	27.70
208	3.30	34.80	200	3.30	34.80	27.72
312	3.31	34.83	300	3.30	34.83	27.74
402	3.26	34.83	400	3.30	34.83	27.74
605	3.26	34.84	600	3.25	34.84	27.75
809	3.27	34.84	800	3.25	34.84	27.75
1,014	3.26	34.86	1,000	3.25	34.86	27.77
1,529	3.29	34.90	1,500	3.30	34.90	27.80

Station 4272; July 29; latitude 49°48.5′ N., longitude 49°18′ W., depth 1,504 meters, dynamic height 970.867

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	9.25	33.36	0	9.25	33.36	25.81
23	5.36	34.00	25	5.15	34.05	26.93
47	3.48	34.49	50	3.45	34.51	27.47
70	3.41	34.62	75	3.40	34.64	27.58
93	3.29	34.70	100	3.30	34.71	27.65
139	3.36	34.77	150	3.35	34.78	27.69
186	3.37	34.81	200	3.35	34.81	27.72
279	3.36	34.82	300	3.35	34.82	27.73
328	3.31	34.83	400	3.30	34.83	27.74
505	3.28	34.84	600	3.25	34.84	27.75
691	3.24	34.84	800	3.25	34.84	27.75
878	3.23	34.84	1,000	3.25	34.85	27.76
1,369	3.23	34.86	(1,500)	3.25	34.86	27.77

Station 4273; July 29; latitude 49°36′ N., longitude 50°02′ W., depth 594 meters, dynamic height 970.919

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	7.94	31.31	0	7.94	31.31	24.42
26	−0.64	33.66	25	−0.65	33.57	27.01
52	−0.10	33.94	50	−0.25	33.90	27.25
78	0.69	34.13	75	0.65	34.11	27.37
104	1.36	34.29	100	1.25	34.27	27.47
154	2.40	34.50	150	2.30	34.48	27.55
206	3.02	34.64	200	2.95	34.63	27.61
310	3.50	34.80	300	3.50	34.80	27.70
396	3.31	34.80	400	3.30	34.80	27.72
593	3.27	34.84	600	3.25	34.84	27.74

STATIONS OCCUPIED IN 1950—Continued

Station 4274; July 29; latitude 49°25′ N., longitude 50°32′ W., depth 329 meters, dynamic height 970.956

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	10.34	32.48	0	10.34	32.48	24.95
25	2.01	33.08	25	2.01	33.08	26.46
50	−0.25	33.61	50	−0.25	33.61	27.02
75	−0.34	33.85	75	−0.34	33.85	27.21
100	−0.12	33.97	100	−0.12	33.97	27.31
150	0.97	34.21	150	0.97	34.21	27.43
199	1.90	34.41	200	1.90	34.41	27.53
299	3.15	34.71	300	3.15	34.71	27.66

Station 4275; July 29; latitude 49°16′ N., longitude 51°03′ W., depth 333 meters, dynamic height 970.982

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	11.02	31.89	0	11.02	31.89	24.38
25	2.85	33.11	25	2.85	33.11	26.41
50	−0.93	33.44	50	−0.93	33.44	26.91
75	−1.12	33.64	75	−1.12	33.64	27.08
99	−0.61	33.82	100	−0.60	33.83	27.20
149	0.43	34.08	150	0.45	34.09	27.36
199	1.12	34.27	200	1.15	34.28	27.47
298	2.70	34.63	300	2.75	34.64	27.64

Station 4276; July 30; latitude 49°10.5′ N., longitude 51°30′ W., depth 315 meters, dynamic height 971.023

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	11.49	31.58	0	11.49	31.58	24.05
25	0.43	32.66	25	0.43	32.66	26.22
50	−1.35	33.18	50	−1.35	33.18	26.71
74	−1.40	33.37	75	−1.35	33.37	26.86
99	−1.32	33.52	100	−1.30	33.53	26.99
149	−0.61	33.84	150	−0.60	33.85	27.22
198	0.28	34.09	200	0.35	34.10	27.38
297	2.25	34.51	300	2.30	34.53	27.59

Station 4277; July 30; latitude 49°04′ N., longitude 51°51′ W., depth 295 meters, dynamic height 971.080

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	11.36	31.28	0	11.36	31.28	23.84
22	−0.74	32.76	25	−1.00	32.82	26.41
44	−1.67	33.05	50	−1.70	33.08	26.63
66	−1.76	33.15	75	−1.75	33.17	26.71
88	−1.75	33.20	100	−1.75	33.22	26.75
132	−1.69	33.28	150	−1.65	33.33	26.84
175	−1.57	33.43	200	−1.30	33.57	27.03
250	−0.28	33.93				

Station 4278; July 30; latitude 49°01′ N., longitude 52°03′ W., depth 293 meters, dynamic height 971.076

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	10.93	31.53	0	10.93	31.53	24.11
21	−0.54	32.86	25	−0.95	32.93	26.49
43	−1.62	33.08	50	−1.70	33.11	26.66
64	−1.76	33.17	75	−1.75	33.20	26.74
86	−1.75	33.22	100	−1.75	33.24	26.77
128	−1.73	33.26	150	−1.70	33.29	26.80
171	−1.64	33.36	200	−1.25	33.56	27.02
244	−0.31	33.89				

Station 4279; July 30; latitude 48°55′ N., longitude 52°21′ W., depth 336 meters, dynamic height 971.073

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	11.15	31.57	0	11.15	31.57	24.10
23	2.14	32.29	25	1.55	32.36	25.91
46	−1.10	33.04	50	−1.20	33.08	26.62
69	−1.47	33.18	75	−1.50	33.20	26.73
91	−1.53	33.27	100	−1.55	33.30	26.81
137	−1.54	33.43	150	−1.50	33.47	26.96
183	−1.14	33.62	200	−0.80	33.73	27.13
274	1.11	34.23	(300)	1.80	34.39	27.52

Station 4280; July 30; latitude 48°49.5′ N., longitude 52°42′ W., depth 220 meters, dynamic height 971.080

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	11.65	31.10	0	11.65	31.10	23.66
25	1.36	32.36	25	1.36	32.36	25.92
50	−1.51	32.93	50	−1.51	32.93	26.51
74	−1.63	33.14	75	−1.65	33.15	26.69
99	−1.65	33.20	100	−1.65	33.20	26.73
148	−1.59	33.39	150	−1.55	33.41	26.91
197	−0.70	33.76	200	−0.65	33.79	27.18

Station 4281; July 30; latitude 48°47′ N., longitude 52°47′ W., depth 146 meters, dynamic height 971.076

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	12.01	31.12	0	12.01	31.12	23.60
21	0.11	32.50	25	−0.05	32.54	26.15
48	−1.43	32.95	50	−1.45	32.97	26.54
73	−1.62	33.08	75	−1.65	33.09	26.64
97	−1.71	33.14	100	−1.70	33.15	26.69
124	−1.71	33.18				

Station 4282; July 30; latitude 48°45.5′ N., longitude 52°56′ W., depth 114 meters, dynamic height 971.100

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	12.73	30.82	0	13.73	30.82	23.24
22	1.76	31.90	25	1.20	31.96	25.62
45	−0.82	32.58	50	−1.00	32.65	26.68
67	−1.42	32.90	(75)	−1.50	32.99	26.56
			(100)	−1.60	33.20	26.73

Station 4283; July 31; latitude 53°44.5′ N., longitude 55°48′ W. depth 116 meters, dynamic height 1454.929

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.15	30.29	0	6.15	30.29	23.84
25	−1.45	32.59	25	−1.45	32.59	26.24
50	−1.68	32.82	50	−1.68	32.82	26.43
74	−1.64	32.91	75	−1.65	32.91	26.50
99	−1.65	32.95	100	−1.65	32.95	26.53

Station 4284; July 31; latitude 53°53.5′ N., longitude 55°35′ W., depth 210 meters, dynamic height 1454.927

Observed values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	5.89	30.74	0	5.89	30.74	24.23
25	−1.45	32.62	25	−1.45	32.62	26.26
50	−1.65	32.82	50	−1.65	32.82	26.43
75	−1.67	32.86	75	−1.67	32.86	26.46
100	−1.57	32.92	100	−1.57	32.92	26.51
149	−1.45	33.14	150	−1.45	33.15	26.68
195	−1.37	33.41	(200)	−1.35	33.41	26.90

STATIONS OCCUPIED IN 1950—Continued

Station 4285; July 31; latitude 54°00′ N., longitude 55°25′ W., depth 172 meters, dynamic height 1454.930

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	7.36	30.19	0	7.36	30.19	23.62
25	2.44	31.91	25	2.44	31.91	25.49
50	−1.11	32.75	50	−1.11	32.75	26.36
75	−1.65	33.04	75	−1.65	33.04	26.60
100	−1.60	33.17	100	−1.60	33.17	26.71
150	−1.35	33.41	150	−1.35	33.41	26.90

Station 4286; July 31; latitude 54°08.5′ N., longitude 55°05′ W., depth 170 meters, dynamic height 1454.919

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	7.98	30.50	0	7.98	30.50	23.77
25	2.98	31.71	25	2.98	31.71	25.28
49	−1.24	32.82	50	−1.25	32.83	26.42
74	−1.59	33.11	75	−1.55	33.11	26.66
99	−1.57	33.28	100	−1.55	33.29	26.80
148	−0.91	33.73	150	−0.85	33.75	27.15

Station 4287; Aug. 1; latitude 54°13′ N., longitude 54°52′ W., depth 185 meters, dynamic height 1454.898

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.56	30.74	0	6.56	30.74	24.15
25	−1.02	32.44	25	−1.02	32.44	26.10
49	−1.52	32.95	50	−1.50	32.95	26.52
74	−1.52	33.12	75	−1.50	33.12	26.66
99	−1.49	33.30	100	−1.50	33.31	26.82
148	−1.41	33.54	150	−1.40	33.55	27.01

Station 4288; Aug. 1; latitude 54°25′ N., longitude 54°29′ W., depth 222 meters, dynamic height 1454.938

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	7.29	29.87	0	7.29	29.87	23.36
14	4.60	30.56	25	1.40	31.63	25.34
37	−1.61	32.80	50	−1.60	32.87	26.47
60	−1.58	32.92	75	−1.50	33.00	26.57
83	−1.45	33.05	100	−1.40	33.15	26.68
129	−1.29	33.34	150	−1.00	33.49	26.95
193	−0.34	33.83	200	−0.25	33.87	27.23

Station 4289; Aug. 1; latitude 54°45′ N., longitude 53°57′ W., depth 328 meters, dynamic height 1454.933

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.99	29.88	0	6.99	29.88	23.42
23	−1.39	32.71	25	−1.45	32.73	26.35
46	−1.62	32.85	50	−1.65	32.87	26.47
69	−1.59	32.94	75	−1.55	32.97	26.55
91	−1.49	33.04	100	−1.45	33.08	26.63
137	−1.33	33.26	150	−1.30	33.33	26.83
182	−1.22	33.50	200	−0.95	33.61	27.05
273	1.68	34.28	(300)	2.80	34.56	27.57

Station 4290; Aug. 1; latitude 54°53′ N., longitude 53°41′ W., depth 631 meters, dynamic height 1454.855

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.73	29.64	0	6.73	29.64	23.26
25	1.95	32.06	25	1.95	32.06	25.65
49	−1.31	33.06	50	−1.30	33.09	26.63
74	−1.28	33.35	75	−1.30	33.36	26.85
99	−0.74	33.54	100	−0.70	33.55	26.99
148	1.64	34.27	150	1.75	34.29	27.44
197	2.85	34.54	200	2.90	34.55	27.56
296	3.60	34.71	300	3.60	34.71	27.62
367	3.78	34.78	400	3.80	34.79	27.66
561	3.82	34.80	(600)	3.80	34.80	27.67

Station 4291; Aug. 1; latitude 54°58′ N., longitude 53°26′ W., depth 1,692 meters, dynamic height 1454.710

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	5.58	31.03	0	5.58	31.03	24.49
24	3.99	33.77	25	3.85	33.80	26.86
47	2.92	34.26	50	2.90	34.28	27.34
71	2.43	34.41	75	2.45	34.13	27.49
94	2.66	34.53	100	2.75	34.56	27.58
142	3.52	34.74	150	3.65	34.76	27.65
189	3.87	34.82	200	3.85	34.82	27.68
283	3.86	34.83	300	3.85	34.83	27.68
340	3.81	34.83	400	3.80	34.83	27.69
516	3.67	34.84	600	3.60	34.84	27.72
696	3.53	34.84	800	3.50	34.84	27.73
883	3.50	34.84	1,000	3.45	34.84	27.73
1,376	3.32	34.85	(1,500)	3.30	34.85	27.76

Station 4292; Aug. 1; latitude 55°01′ N., longitude 53°11′ W., depth 2,103 meters, dynamic height 1454.661

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.37	31.73	0	6.37	31.73	24.85
27	2.76	34.30	25	2.85	34.11	27.21
53	2.06	34.41	50	2.05	34.40	27.51
79	2.45	34.54	75	2.35	34.51	27.57
105	3.39	34.72	100	3.20	34.69	27.64
159	3.81	34.80	150	3.80	34.79	27.66
211	3.90	34.84	200	3.90	34.83	27.68
316	3.79	34.84	300	3.80	34.84	27.70
398	3.65	34.85	400	3.65	34.85	27.72
601	3.56	34.86	600	3.55	34.86	27.74
806	3.41	34.85	800	3.40	34.85	27.75
1,008	3.36	34.86	1,000	3.35	34.86	27.76
1,519	3.30	34.86	1,500	3.30	34.86	27.77
2,032	2.78	34.85	2,000	2.80	34.85	27.80

Station 4293; Aug. 1; latitude 55°11′ N., longitude 52°52′ W., depth 2,954 meters, dynamic height 1454.675

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Scaled Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	6.54	32.00	0	6.54	32.00	25.14
25	3.06	33.87	25	3.06	33.87	27.00
49	2.23	34.30	50	2.20	34.30	27.42
74	2.34	34.45	75	2.40	34.45	27.52
99	3.15	34.66	100	3.15	34.66	27.62
148	3.52	34.74	150	3.55	34.74	27.64
197	3.72	34.78	200	3.75	34.79	27.66
296	3.91	34.84	300	3.90	34.84	27.69
372	3.75	34.84	400	3.75	34.84	27.70
563	3.60	34.84	600	3.55	34.84	27.72
758	3.49	34.86	800	3.45	34.86	27.75
952	3.34	34.845	1,000	3.30	34.85	27.76
1,443	3.20	34.85	1,500	3.20	34.85	27.77
2,040	2.92	34.88	2,000	2.95	34.88	27.81
2,547	2.28	34.88	2,500	2.30	34.88	27.87
2,953	1.96	34.85				

STATIONS OCCUPIED IN 1950—Continued

Station 4294; Aug. 1; latitude 55°29′ N., longitude 52°16′ W., depth 3,218 meters, dynamic height 1454.636

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Sealed Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.30	33.62	0	8.30	33.62	26.17
25	7.55	34.36	25	7.55	34.36	26.86
50	5.28	34.70	50	5.28	34.70	27.43
76	3.92	34.75	75	3.95	34.75	27.61
101	3.42	34.76	100	3.45	34.76	27.67
152	3.33	34.79	150	3.35	34.79	27.70
202	3.35	34.83	200	3.35	34.83	27.73
303	3.30	34.82	300	3.30	34.82	27.74
397	3.24	34.83	400	3.25	34.83	27.74
595	3.18	34.82	600	3.20	34.82	27.75
794	3.18	34.83	800	3.15	34.83	27.75
991	3.17	34.835	1,000	3.15	34.835	27.76
1,484	3.19	34.84	1,500	3.20	34.84	27.76
1,970	3.39	34.90	2,000	3.35	34.90	27.79
2,475	2.92	34.92	2,500	2.90	34.92	27.85
3,092	1.61	34.85	3,000	1.85	34.87	27.90

Station 4295; Aug. 2; latitude 55°55′ N., longitude 51°31′W., depth 3,475 meters, dynamic height 1454.626

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Sealed Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	9.26	34.49	0	9.26	31.49	26.70
25	7.74	34.67	25	7.74	34.67	27.07
49	5.84	34.69	50	5.75	34.69	27.36
74	4.18	34.74	75	4.15	34.74	27.58
98	3.52	34.75	100	3.50	34.75	27.66
148	3.30	34.79	150	3.30	34.79	27.71
198	3.28	34.80	200	3.30	34.80	27.72
296	3.26	34.82	300	3.25	34.82	27.74
361	3.19	34.82	400	3.20	34.82	27.75
545	3.17	34.82	600	3.20	34.83	27.75
733	3.20	34.84	800	3.20	34.84	27.76
920	3.19	34.84	1,000	3.20	34.84	27.76
1,397	3.23	34.84	1,500	3.25	34.85	27.76
2,014	3.39	34.88	2,000	3.40	34.88	27.77
2,555	3.02	34.855	2,500	3.05	34.86	27.79
3,103	2.45	34.88	3,000	2.60	34.88	27.84
3,204	2.17	34.85				

Station 4296; Aug. 2; latitude 56°26′ N., longitude 50°22′ W., depth 3,548 meters, dynamic height 1454.611.

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Sealed Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.99	34.62	0	8.99	34.62	26.84
26	7.73	34.63	25	7.80	34.63	27.03
51	5.41	34.72	50	5.50	34.72	27.42
77	4.11	34.76	75	4.15	34.76	27.60
103	3.52	34.79	100	3.60	34.79	27.68
153	3.32	34.80	150	3.35	34.80	27.71
204	3.29	34.83	200	3.30	34.83	27.74
307	3.28	34.84	300	3.25	34.84	27.75
398	3.21	34.84	400	3.20	34.84	27.76
600	3.17	34.84	600	3.15	34.84	27.76
803	3.19	34.84	800	3.20	34.84	27.76
1,008	3.21	34.85	1,000	3.20	34.85	27.77
1,526	3.20	34.86	1,500	3.20	34.85	27.77
1,943	3.25	34.86	2,000	3.25	34.86	27.77
2,433	3.23	34.91	2,500	3.20	34.91	27.82
2,931	2.82	34.90	3,000	3.75	34.90	27.85
3,407	1.92	34.87	(3,500)	1.65	34.87	27.92

Station 4297; Aug. 3; latitude 57°04.5′ N., longitude 49°26′ W., depth 3,566 meters, dynamic height 1454.597

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Sealed Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.78	34.66	0	8.78	34.66	26.91
25	8.68	34.66	25	8.68	34.66	26.93
51	5.67	34.76	50	5.75	34.76	27.42
76	3.84	34.77	75	3.90	34.77	27.64
102	3.42	34.79	100	3.45	34.79	27.69
154	3.68	34.86	150	3.65	34.85	27.72
205	3.45	34.82	200	3.50	34.82	27.72
307	3.24	34.84	300	3.25	34.84	27.75
329	3.27	34.84	400	3.20	34.84	27.76
498	3.22	34.85	600	3.20	34.86	27.78
673	3.20	34.86	800	3.20	34.86	27.78
1,318	3.19	34.86	1,000	3.20	34.86	27.78
2,204	3.35	34.905	1,500	3.20	34.87	27.79
2,719	2.98	34.92	2,000	3.30	34.90	27.80
3,231	------	34.90	2,500	3.20	34.91	27.82
3,487	1.79	34.87	3,000	2.65	34.91	27.87
			3,500	1.80	34.87	27.91

Station 4298; Aug. 3; latitude 57°35′ N., longitude 48°15′ W., depth 3,402 meters, dynamie height 1454.598

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Sealed Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.88	34.61	0	8.88	34.61	26.86
22	8.90	34.61	25	8.80	34.61	26.87
45	5.21	34.70	50	4.80	34.72	27.50
67	3.87	34.78	75	3.70	34.79	27.67
90	3.57	34.81	100	3.55	34.82	27.71
134	3.50	34.83	150	3.55	34.84	27.72
179	3.55	34.87	200	3.50	34.86	27.75
269	3.30	34.84	300	3.25	34.85	27.76
353	3.18	34.85	400	3.20	34.85	27.77
533	3.20	34.85	600	3.20	34.85	27.77
714	3.20	34.85	800	3.20	34.85	27.77
904	3.20	34.85	1,000	3.20	34.85	27.77
1,398	3.17	34.86	1,500	3.20	34.87	27.79
2,009	3.38	34.90	2,000	3.40	34.90	27.79
2,496	3.02	34.915	2,500	3.00	34.915	27.84
2,979	2.48	34.895	3,000	2.45	34.89	27.86
3,250	1.76	34.86				

Station 4299; Aug. 3; latitude 58°08′ N., longitude 47°07′ W., depth 3,131 meters, dynamie height 1454.633

Observed Values: Depth, meters	Temperature ° C.	Salinity ‰	Sealed Values: Depth, meters	Temperature ° C.	Salinity ‰	σ_t
0	8.39	34.68	0	8.39	34.68	26.98
27	8.40	34.68	25	8.40	34.68	26.98
53	5.63	34.78	50	6.00	34.77	27.40
79	4.45	34.86	75	4.50	34.85	27.63
105	4.45	34.92	100	4.45	34.91	27.69
159	4.13	34.91	150	4.20	34.91	27.72
212	3.78	34.87	200	3.85	34.88	27.72
316	3.61	34.85	300	3.61	34.85	27.73
300	3.60	34.86	400	3.50	34.84	27.73
486	3.40	34.84	600	3.30	34.83	27.74
696	3.26	34.82	800	3.25	34.83	27.74
893	3.22	34.84	1,000	3.25	34.84	27.75
1,420	3.30	34.85	1,500	3.30	34.86	27.77
2,050	3.16	34.92	2,000	3.15	34.92	27.83
2,581	2.74	34.88	2,500	2.85	34.89	27.83
3,131	1.54	34.85	3,000	1.95	34.87	27.90

Station 4300; Aug. 4; latitude 58°35.5′ N., longitude 46°02′ W., depth 2,500 meters, dynamic height 1454.631

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.86	34.84	0	7.86	34.84	27.19
25	7.84	34.84	25	7.84	34.84	27.19
51	7.45	34.84	50	7.50	34.84	27.21
76	5.42	34.92	75	5.45	34.92	27.58
103	5.06	34.93	100	5.10	34.93	27.62
153	4.61	34.94	150	4.65	34.94	27.69
204	4.45	34.92	200	4.45	34.92	27.70
307	4.20	34.91	300	4.20	34.91	27.72
375	4.09	34.92	400	4.05	34.92	27.74
565	3.69	34.90	600	3.65	34.89	27.75
757	3.50	34.88	800	3.45	34.87	27.76
951	3.29	34.85	1,000	3.30	34.85	27.76
1,447	3.44	34.90	1,500	3.45	34.90	27.78
2,074	2.86	34.90	2,000	2.95	34.90	27.83
2,500	1.89	34.86	2,500	1.90	34.86	27.89

Station 4301; Aug. 4; latitude 58°55′ N., longitude 45°16′ W., depth 2,432 meters, dynamic height 1454.645

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.60	34.91	0	7.60	34.91	27.28
25	7.26	34.91	25	7.26	34.91	27.33
49	7.25	34.91	50	7.25	34.91	27.33
74	7.23	34.91	75	7.25	34.91	27.33
98	7.19	34.91	100	7.15	34.91	27.35
147	4.93	34.92	150	4.90	34.92	27.65
196	4.62	34.94	200	4.60	34.94	27.69
294	4.25	34.92	300	4.25	34.92	27.72
370	4.22	34.93	400	4.15	34.92	27.73
558	3.61	34.86	600	3.60	34.86	27.74
749	3.60	34.89	800	3.55	34.88	27.75
941	3.31	34.85	1,000	3.30	34.85	27.76
1,433	3.49	34.91	1,500	3.45	34.91	27.79
2,033	2.81	34.91	2,000	2.85	34.91	27.85
2,332	2.28	34.89				

Station 4302; Aug. 4; latitude 59°09′ N., longitude 44°49′ W., depth 2,054 meters; dynamic height 1454.652

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	7.33	34.92	0	7.33	34.92	27.34
25	7.14	34.94	25	7.14	34.92	27.36
50	7.06	34.95	50	7.06	34.95	27.39
75	6.65	34.97	75	6.65	34.97	27.47
100	5.91	34.99	100	5.91	34.99	27.58
150	5.47	34.98	150	5.47	34.98	27.62
201	5.37	34.99	200	5.35	34.99	27.65
301	4.75	34.94	300	4.75	34.94	27.67
398	4.51	34.95	400	4.50	34.95	27.71
596	4.17	34.92	600	4.15	34.92	27.73
795	3.84	34.90	800	3.85	34.90	27.74
991	3.61	34.88	1,000	3.60	34.88	27.75
1,475	3.44	34.92	1,500	3.40	34.92	27.81
1,991	2.81	34.89	2,000	2.75	34.89	27.84

Station 4303; Aug. 4–5; latitude 59°31.5′ N., longitude 44°28′ W., depth 1,088 meters, dynamic height 1,454.800

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	1.85	32.54	0	1.85	32.54	26.04
20	4.20	33.70	25	4.35	33.83	26.83
40	4.60	34.08	50	4.50	34.25	27.16
60	4.24	34.42	75	3.90	34.37	27.32
80	3.80	34.36	100	3.60	34.36	27.34
120	3.48	34.36	150	3.85	34.45	27.38
161	4.00	34.47	200	3.75	34.46	27.40
241	3.53	34.44	300	3.95	34.62	27.51
360	4.38	34.78	400	4.45	34.82	27.62
554	4.62	34.89	600	4.60	34.90	27.66
759	4.44	34.90	800	4.40	34.90	27.68
960	4.28	34.90	(1,000)	4.20	34.90	27.71

Station 4304; Aug. 5; latitude 59°38.5′ N., longitude 44°15′ W., depth 174 meters, dynamic height 1,454.914

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	2.56	31.56	0	2.56	31.56	25.21
23	0.80	32.78	25	0.70	32.80	26.32
46	0.01	32.99	50	−0.15	33.01	26.54
70	−0.58	33.10	75	−0.55	33.12	26.63
93	−0.38	33.23	100	−0.15	33.27	26.74
139	1.39	33.77	(150)	1.80	33.93	27.15

Station 4305; Aug. 5; latitude 59°40′ N., longitude 44°14′ W., depth 146 meters, dynamic height 1,454.948

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	2.85	31.23	0	2.85	31.23	24.92
25	1.84	31.84	25	1.84	31.84	25.48
50	1.38	32.56	50	1.38	32.56	26.09
75	0.46	32.88	75	0.46	32.88	26.39
100	0.49	33.52	100	0.49	33.52	26.91

Station 4306; Aug. 5; latitude 59°42′ N., longitude 44°15′ W., depth 128 meters, dynamic height 1,454.972

Observed Values			Scaled Values			
Depth, meters	Temperature °C.	Salinity ‰	Depth, meters	Temperature °C.	Salinity ‰	σ_t
0	2.59	31.29	0	2.59	31.29	24.99
25	1.94	31.83	25	1.94	31.83	25.47
50	1.67	32.14	50	1.67	32.14	25.75
76	1.45	32.62	75	1.45	32.60	26.12
101	1.52	33.14	100	1.50	33.12	26.52